CONSECUTIVE STUDIES OF THE SCHOOLROOM BEHAVIOR OF CHILDREN IN RELATION TO THE TEACHERS' DOMINATIVE AND SOCIALLY INTEGRATIVE CONTACTS

BY

MARY FRANCES REED

B.S., Kansas State College, 1928

M.A., University of Ohio, 1931

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN PSYCHOLOGY IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS, 1941

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TABLE OF CONTENTS

Page

I. Introduction 15

II. Observational Situation and Procedure 17

III. Reliability of Observers 32

IV. Integration-Domination Ratios 41

V. Comparison of Teachers and Comparison of Rooms of Children by the Method of Rank Order Correlations. 42

VI. Comparison of Room 2C with Room 2D in Respect to the Behavior of Teachers and of Children in 1938; and Comparison of the Rooms Again with the Same Teachers But Different Children in 1939 44

VII. Comparison of Rooms 2C and 2D in Consecutive Years with the Same Teachers and Different Children 53

VIII. Comparison of the Contacts of Second- and Third-Grade Teachers Who Had Groups of the Same Children Consecutively Enrolled; and Comparison of the Behavior of the Same Groups of Children in the Two Consecutive Grades . . 61

IX. Comparison of Two Third-Grade Rooms 74

X. Intercorrelations of Teacher's Individual Contacts and Child Behavior 78

XI. The Use of Competition. 95

XII. Summary 96

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Chapter II

CONSECUTIVE STUDIES OF THE SCHOOLROOM BEHAVIOR OF CHILDREN IN RELATION TO THE TEACHERS' DOMINATIVE AND SOCIALLY INTEGRATIVE CONTACTS*

I. Introduction

In a preceding study, Joseph E. Brewer (9, chapter ii) made simultaneous records of the classroom behavior of children and of the contacts which the teacher had with them. He gathered his data in two second-grade rooms in the same school building. The rooms were designated Room 2C and Room 2D. He found wide and consistent differences between the teachers in their use of dominative and of socially integrative contacts with the children. Teacher 2C, as compared with teacher 2D, was found to have significantly:

1. Less domination toward the children as a group.
2. Less domination toward the children individually.
3. More integration toward the children as a group.
4. More integration toward the children individually.

Brewer also reported wide and consistent contrasts in the classroom behavior of the children in the two rooms. The children in Room 2C, as compared with the children in Room 2D, showed significantly lower frequencies in:

1. Looking up at seat work.
2. Undetermined child-child contacts (including whispering).
3. Playing with "foreign objects."
4. Conforming to teacher domination.
5. Nonconforming to teacher domination.

The children in Room 2C, as compared with the children in Room 2D, showed significantly higher frequencies in:

6. Making voluntary suggestions.
7. Voluntarily indicating by hand that they wished to do something or say something.
8. Voluntarily expressing appreciation.
9. Making voluntary social contributions.
10. Telling experiences in response to the teacher's open invitation or question.
11. Making suggestions in response to teacher's open invitation or question.

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*By Mary Frances Reed; a thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology in the Graduate School of the University of Illinois, Urbana, Illinois, 1941.

12. Indicating by hand in response to teacher's open invitation or question that they wished to do something.
13. Making social contributions in response to teacher's open invitation or question.
14. Total social contributions.

Brewer's array of statistically reliable critical ratios indicates a high degree of internal consistency in his data. The direction of the differences between the children in the two rooms shows a consistency in the behavior of the children. Moreover, the differences in the behavior of the two rooms of children are what one might expect, knowing the differences between the teachers.

The children in the two rooms were enrolled by lot in the first grade and were promoted as rooms through the elementary school. The children in Rooms 2C and 2D came from the same neighborhood and were comparable in intelligence. There were no known selective factors in the assigning of the children to the two rooms. Notwithstanding this, it was theoretically possible that by some chance the children in Room 2D were in some way poorly adjusted and that, in consequence, teacher 2D had had a more difficult task, which called (at least temporarily) for more domination.

If this very dominating teacher were given a new group of children, would she continue to be so dominating? Would she continue to show such low frequencies of integrative contacts? If the very integrative teacher were placed with a different group of children, would she continue to be highly integrative?

If the children were to be placed with different teachers would their behavior continue to be largely the same?

Ideally, it would have made a neat experiment if the two teachers could have exchanged rooms. After an adjustment period, new samplings of teacher contacts and of child behavior should have been quite revealing. Practically, such a procedure was out of the question. It was possible, however, to repeat the observational study a year later. The two second-grade teachers were then with new rooms of children. And the two rooms of children studied by Brewer were then with new teachers in the third grade. It was the main purpose of the investigation reported here to make such consecutive studies of teachers and of children in order to determine consistencies and inconsistencies of classroom behavior and personality patterns. For this purpose, not only the methods and procedure but also the original data of Joseph E. Brewer[1] have been employed.

This study was attempted to discover in what ways and to what extent the significant differences in behavior patterns of the two second-grade teachers have persisted during the next consecutive year with different

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[1] The writer is grateful to Joseph E. Brewer, General Education Board Fellow in Psychology, who made available his own original data and who on many occasions during the course of this study gave generous assistance.

children, and whether the new groups of second-grade children would or would not show corresponding significant differences in their classroom behavior. The study has likewise attempted to discover in what ways and to what extent significant differences in behavior patterns of the two groups of second-grade children have persisted into the third grade and whether the new third-grade teachers have shown, and to what extent they have shown, behavior patterns corresponding to those of their predecessors. More specifically, the aims of this study may be stated as follows:

1. From the data gathered during the second of two consecutive years of study, to compare the two second-grade rooms with each other as to teacher's group contacts, teacher's individual contacts, and child behavior.
2. In the situation in which two second-grade teachers each taught different groups of children in consecutive years, to compare each teacher respectively for the two years as to her group contacts and individual contacts and to compare for each teacher's room the child behavior of the two consecutive groups of children.
3. For two groups of children to compare each respectively in the second and third grades in consecutive years as to the teachers' group contacts, teachers' individual contacts, and child behavior.
4. To compare two groups of third-grade children in respect to teachers' group contacts, teachers' individual contacts, and child behavior.
5. To ascertain the intercorrelations (a) among types of teachers' individual contacts, (b) among categories of children's behavior, and (c) between types of teachers' individual contacts and categories of child behavior.

II. Observational Situation and Procedure

A. Subjects

The subjects used in this study were 129 children and four teachers. Of this number of children forty-nine were consecutively enrolled in two second-grade and two third-grade rooms and, together with their teachers, were studied in their respective second and third grades. Table 1 gives the numbers and sex distributions of the children.

The two rooms of children and their respective teachers at both grade levels are designated as Room C and teacher C, Room D and teacher D. The grade level is designated by the Arabic number preceding the capital letter. The year in which the study was made is indicated by the numerals 38 for 1938 and 39 for 1939.

Because a certain number of children originally studied in 1938 in the second grade dropped out or moved away and were therefore not available for the follow-up study in 1939, the lower case letter c has been used to designate a group of children who were present both years and who were consecutively studied. In a number of places the original data of

TABLE 1

SUBJECTS

Room	Boys	Girls	Total	C.A. (months)		M.A. (months)		I.Q.	
				Mean	Range	Mean	Range	Mean	Range
2C38.....	14	16	30	92	82-106	106	80-126	116	82-146
2C38c....	10	12	22	92	82-106	109	82-126	119	89-146
3C39.....	16	16	32	104	94-133	...	.....	...	.....
3C39c....	10	12	22	104	94-118	...	.....	...	.....
2D38.....	11	18	29	90	81-98	107	85-138	120	92-165
2D38c....	9	18	27	90	81-98	107	85-138	119	92-165
3D39.....	11	21	32	102	93-115	...	.....	...	.....
3D39c....	9	18	27	102	93-110	...	.....	...	.....
2C39.....	11	16	27	90	83-97	...	.....	...	.....
2D39.....	17	11	28	93	85-109	...	.....	...	.....
Total different children	61	68	129	...	.....	...	.....	...	.....

Brewer for 1938 have been reanalyzed and recomputed to show certain comparisons for the children consecutively studied.

Table 1 indicates that there were four boys and four girls present in Room 2C38 who were not enrolled the following year in the third grade. Similarly there were two boys enrolled in Room 2D38 who were not available the following year for study in the third grade.

In the third-grade rooms there were new children who had not been enrolled in this school in the second grade. Table 1 shows that in Room 3C39 there were six boys and four girls who were not available for the consecutive study but who have been included in certain analyses of data for the room as a whole. In Room 3D39 there were two boys and three girls who had not been enrolled in the second grade the preceding year.

Means and ranges of mental age and IQ have been reproduced from Brewer (9, chapter ii, Table 1) or recomputed from his original data for the two second-grade rooms for 1938. Estimates of IQ are based on Revised Stanford-Binet mental tests administered to each of the children in both rooms. The difference between the means for the two entire groups yielded a critical ratio of only 0.93. In general the children were normal or superior in intelligence.

It can be seen that the dropping out of eight of the children of Room 2C38 caused no difference in the mean and range of chronological ages. They included, however, some children below the average in intelligence, whose departure raised the mean mental age three months and the mean IQ three points. The dropping out of two children of Room 2D38 produced

no change in chronological age or mental age and caused a drop in mean IQ of only one point.

The ten new third-grade children who were enrolled in 3C39, although raising the upper range, produced no change in the mean chronological age of the group when the consecutively enrolled children were considered separately. The five new third-grade children who were enrolled in 3D39 slightly increased the range of chronological age but produced no change in the mean for the group.

The two new groups of second-grade children enrolled in 1939 were, in respect to mean ages and age ranges, fairly comparable with each other and with the two groups previously enrolled in 1938.

Among the entire number of 129 children there were sixty-one boys and sixty-eight girls. This proportion was not maintained in each of the groups of children. In Rooms 2D38c and 3D39c there were twice as many girls consecutively enrolled as there were boys, the group consisting of nine boys and eighteen girls. It can be noted that in 1938 teacher 2D had seven more girls than boys in the entire enrollment; in 1939 the sex ratio was almost reversed, since she had six more boys than girls.

The children in each of the rooms came from similar socioeconomic levels; they were assigned by lot to rooms in the first grade, and they moved as rooms from year to year through the first six grades. Both in 1938 and 1939 approximately the same numbers of children in each second-grade room had previously attended kindergarten in the same school building.

The teachers had been informed that the research program was an attempt to measure certain aspects of the personality development of children in the classroom environment and that all data would be kept anonymous. There was no special reason why this or any other of the several schools used in this research program was selected, except for convenient location of the school and the cordial co-operation of the superintendent, the principal, and the teachers.

B. School situation

Curricular activities observed in this study included arithmetic, writing, spelling, grammar, music, art, class discussion, reading to the group by the teacher or by a child, and seat work. In almost every class activity except reading, the children worked in a single group. Children were assigned to reading groups on the basis of reading ability. A child might be transferred from one group to another if his relative reading ability improved or regressed. Most of the reading groups sat in a small semicircle at the front or, in some cases, at the back of the room.

The physical characteristics of the rooms were similar, with large windows, movable desks, and chairs which were arranged in rows of twos. In the second grade the children's lockers were in the room. The lockers for the third-grade children were in the hallway.

C. Methods and procedure

By direct observation an observer recorded simultaneously in defined categories a child's behavior and the contacts which the teacher had with that child as an individual or as a member of a group. The observation blank, shown in Figure 1, was the same one used by Brewer (9, chapter ii). The three columns on the observation blank, respectively from left to right, provided space for recording by means of tallies the teacher's group contacts, teacher's individual contacts, and child behavior. On each blank was recorded five minutes of observation.

The observer sat at the side of the room near the front where he could more easily see the faces of the children and be near the reading groups. The observer attempted to be as inconspicuous as possible and to be preoccupied with his own work, taking part in school activities on very infrequent occasions and then only when directly addressed.

The observer made records for one child at a time, recording for one five-minute period the behavior of the particular child under observation, together with the teacher's contacts with this child as an individual or as a member of a group of two or more children. Children were listed in alphabetical order of first names and, except in cases of absence and other irregular circumstances, were observed in rotation by five-minute periods.

Observations were made continuously or with intervals of a minute or less for changing observation blanks during regular morning and afternoon sessions of school. The observations were continued until each child had been observed for a total of two hours of nonconsecutive five-minute samplings. For each child the samplings were distributed over the beginning, middle, and close of the mornings and afternoons, with fourteen samplings in the morning and ten in the afternoon. This ratio approximated the ratio of total time in the morning and afternoon sessions.

The total amount of observation for each teacher is therefore two hours times the number of the children in her group. The data used in this study represent 118 hours of observation reported by Brewer for 1938 and 238 hours of observation made in 1939. This amount of time, exclusive of the observation time used for training of observers and establishing of reliability of observers, is shown by rooms in the following tabulation:

1938		1939	
Room	Hours	Room	Hours
2C38	60	2C39	54
2D38	58	2D39	56
		3C39	64
		3D39	64
Total	118		238

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University of Illinois
Sept. 1940

Child.....Teacher.....Observer.....
School.....Grade.....Obs. began.....Date.....
Activity:

DC-1			N.H.		
2					
3			L.Up		
4					
5			L.Seat		
6			Undet.		
7			F.O.		
11					
			P.		
DN-1					
6			N-1		
7			2		
8					
			M.		
9			L-1 Ans S		
10			2 H		
DT-4			3 Ans B		
13			4 F		
16					
23			K-1 See H		
			2 Pl Ex		
			3 Con S		
IC-17			4 Con O		
IN-18					
19q					
19s					
				V	R
IT-14			J-1 Tell E		
16			2 Br		
18			3 Sug .		
19q			4 Off S		
19s			5 H		
20			6 Ap		

Fig. 1.—Observation Blank

Since the observations recorded by Brewer in 1938 were taken during January and February, the data obtained for 1939 were recorded during the same months.

D. Definitions of behavior categories

1. Teacher contacts.—The definitions of teacher contacts were those reported by Anderson (9, chapter 1). Teacher contacts were recorded as dominative or as socially integrative behavior. But within these large divisions, categories of teacher contacts were separated into situational groupings which were assumed to differentiate degrees of domination and degrees of social integration. These groupings are referred to by the rather loosely used term of situational types of teacher contacts.

Three types or degrees of domination were designated:

DC, Domination, with evidence of conflict;
DN, Domination, with no evidence of conflict;
DT, Domination, with evidence of working together.

Two types or degrees of integrative behavior were designated:

IN, Integration, with no evidence of working together;
IT, Integration, with evidence of working together.

An individual contact is a teacher's contact with one child. A group contact is a teacher's contact with two or more children.

The following definitions, without the illustrative examples, are reproduced from Anderson (9, chapter 1):

> In each instance of recorded teacher contacts the behavior of both teacher and child at the time was considered by the observer in determining both in which category and in which type of teacher behavior to record a given contact.
>
> Conflict, or working against each other, was said to exist when the child by verbal expression or physical action indicated a goal or desire of his own and the teacher obstructed his pursuit or achievement of that goal or desire by imposing her own wishes or goals.
>
> Evidence of working together consisted in verbal or other expressions which indicated that both teacher and child were pursuing the same goal or were trying to find a common purpose without the imposition of goals, desires, or ideas of the one on the other. Thus, in recording the teacher's behavior, this evidence could appear only when the teacher attempted to co-operate with a child in an activity in which he was already engaged, or when the child had already given indication that he voluntarily or spontaneously accepted the teacher's ideas or goals as his own. The "acceptance" of the teacher's goals or problems does not include obedience or conforming under duress.
>
> The categories of teacher behavior which comprise the five situational types of teacher contacts are given below. It should be pointed out that the numbers of the categories have largely been retained from definitions in previous studies (5, 8) and that within any situational type of contact the numbers are not consecutive nor do the categories constitute a series. Because some of the categories, as, for example, numbers 4, 6, 16, 18, and

19, occur in more than one situational type of contact, it was impossible to have the numbers consecutive.

DC, Domination, with evidence of conflict

The child has given some expression of his goals or desires and the teacher behaves in a manner to stop that behavior without asking the child or seeking to work out a solution between them. In effect the teacher uses her own experience to evaluate and judge adversely regarding the importance of the child's behavior. Within this classification eight categories of teacher contacts were differentiated.

DC-1, Determines a detail of activity in conflict

DC-3, Relocates child

This includes telling the child to move to another part of the room because of some disturbance, e.g., playing with someone near him or making noises. It also includes actual physical relocating, i.e., picking up child and carrying him to new position. (Relocating child not in conflict with T [the teacher] or with others is recorded under DN-1)

DC-4, Direct refusal or contradiction; evasion of a child's protest or complaint; postponement without expressed reason or consideration

DC-5, Disapproval, blame, or shame directed toward the child as a person

This category includes psychological rejection or rejective behavior.

DC-6, Warnings, threats, reminders, conditional promises, obstruction, or interruption

DC-7, Calls to attention or to group activity

The contact occurs most frequently in situations where T has to repeat her calls to attention because of slow, indifferent, or negativistic children, or children who "fail to hear."

DC-11, Punishment, which includes sending out of room; keeping after school; sending to principal's office; physical attack by T; depriving child of specific material, activity, "right," or privilege

DN, Domination, with no evidence of conflict; DN-(1-8) directive; DN-(9-10) lecture method

Included here are the routine mechanics of group management—administrative short-cuts to a teacher-determined goal. In determining the goal, however, the teacher may be acting more as agent of society or of the school system than as an individual. The teacher's decisions are unsolicited; they anticipate conforming on the part of the child. Within this

classification four categories of teacher contacts were differentiated as directive contacts, two as lecture method.

DN-1, Determines a detail of activity, mostly of a routine sort, with no evidence of conflict

Teacher introduces a subject for discussion, or introduces an activity for an individual, a group, or herself. This category includes relocating child not in conflict with T or others. Calling the roll: the presumption is that calling the roll is a repetition of DN-1 instructions to "answer when your name is called."

DN-6, Warnings, threats, reminders, conditional promises, with no evidence of conflict

DN-7, Calls to attention or to group activity

DN-8, Makes gratuitous judgment for child, including rationing material

DN-9, Lecture method: statements

A clear-cut distinction is difficult to make between DN-9 or DN-10 and the respective IN-19 statements and questions regarding possible, though not expressed, interest or activity of child. DN-9 includes statements that relate to the textbook, curriculum, or schoolroom conventions; they are given gratuitously in the absence of expressed interest of the child. There is an implication that the child ought to know or learn the content volunteered by T and that he may be held responsible for it.

DN-10, Lecture method: questions

This category includes only questions with predetermined correct answers, with "answers in the back of the book," or in the teacher's experience. T always has the answer before asking the question.

DT, Domination, in working together

T retains her "right" to make decisions or determine the activity, but works with an expressed desire of the child. T recognizes child's "right" to an opinion, but child does not make the final or the immediate decision. Within this classification four categories of teacher contacts were distinguished.

For DT-4, DT-13, and DT-23, T admits accord with certain aspects of child's goal, but reserves for herself the decision as to whether and in what order or manner child pursues his goal.

For DT-16 the goal for the child has been defined in advance by T. The contact presumably "releases" the child for a new goal or for another stage or step in the present goal.

DT-4, Refusal, denial, or contradiction, with explanation; postponement with reason or consideration or with future time set

DT-13, Selects child for activity on basis of child's expressed interest

Selects implies expression of interest or desire by two or more among whom T selects one or a group.

DT-16, Approval of required work

T gives approval of required work. If the work was not required but has been done on the child's initiative, check approval as IT-16. The behavior is frequently observed in situations where the child must have the teacher's approval of one stage of his work before going on to the next stage. This category includes praise for conforming with ordinary schoolroom conventions.

DT-23, Gives permission

Permission represents a decision that is made by the teacher; it is an expression of control founded on a narrow experiential base. Permission is a response to the child's request, but it presupposes that permission has to be granted, that the child is not free to act otherwise.

IN, Integration, with no evidence of working together

These contacts are initiated by T (the teacher). In them T is in no way using force, coercion, or other pressure on the child. The contacts are mainly exploratory, of the sort one would use in trying to arouse an expression of interest by another. When T asks questions or makes suggestions the child has freedom to express interest or disinterest; he may accept or decline. In advance of the contacts, it is not apparent that there is either conflict between T and child or interest of the child in the subject initiated by T. It sometimes happens that a contact is erroneously recorded under IN, that what appeared as freedom of choice was not freedom to choose. In such cases the domination is recorded in the subsequent teacher contacts.

Many statements or questions recorded as IN contacts will not be different per se from DN-9 or DN-10, lecture method, but in IN contacts there will be no evidence of a demand by T that the child display interest. The teacher may have a goal or problem, but it is not apparent that she expects a child to accept that goal or problem. The child has given no specific evidence that he is interested in what the teacher says, or that he wants to do that which is suggested. The choice is left with the child.

IN-18, Extends invitation (always initiated by T, in contrast with IT-18)

IN-19q, Question regarding possible, though not expressed (in contrast with IT-19q) interest or activity of child

Many contacts in this category are those in which T is asking for information.

IN-19s, Statement regarding possible, though not expressed (in contrast with IT-19s), interest or activity of child

IT, Integration, with evidence of working together

There must be some evidence of direction of goals for both teacher and child. Child is "in" situation; he has given some indication of interest or desire. In all IT contacts the child, as a person, is "accepted as he is." The incorrectness of his solution to any problem or the quality of his performance does not affect adversely his status of being accepted as an individual. He can, therefore, "make mistakes without blame." This type of contact is that indicating the closest rapprochement of child and teacher. When there is objective evidence of joint participation toward a common goal, a contact is recorded as IT. The situation may have originated with the teacher, but the child must have accepted the activity without evidence of coercion from the teacher.

IT-14, Helps child to define, redefine, or advance a problem

Contacts recorded under IT-14 ranged from telling a child a word in a reading lesson to helping him work out a complex social relationship. There must be evidence that the problem has been stated or accepted by the child. This category includes both questions and statements.

IT-16, Approval, accord, thanks, acceptance of the spontaneous or self-initiated behavior of the child; approval where there can be several answers or new answers

IT-18, Extends invitation in response to child's expressed wish, suggestion, or need

IT-19q, Questions regarding the child's expressed interest or activity which do not contribute to a problem of the child's (IT-14), or which do not merely express approval (IT-16).

Many contacts in this category are those in which T is asking for information.

IT-19s, Statements regarding the child's expressed interest or activity which do not contribute to a problem of the child's (IT-14), or which do not merely express approval (IT-16).

Story reading by the teacher would be recorded under IT-19s when there is evidence of the children's interest.

IT-20, Admits responsibility for own act that is inconvenient, unjust, or unfair to another, or admits own ignorance or incapacity

In addition to the above categories which are mutually exclusive, there were three other superimposed categories recorded by marking on the blank the symbols x, z, or ch.[2] The definitions and examples used in recording

[2] These symbols have been used in the study by Brewer (9, chapter ii) and in this investigation. Because of the difficulties explained later the symbols x, z, and ch have been discarded for subsequent investigations.

teachers' contacts as x, z, and ch were the following:

x, Teacher contact fosters competition or adverse comparison

The symbol (x) is used to designate situations in which adverse comparison is made or competition is fostered. In the teacher's behavior it will usually involve an interplay between two or more children; more rarely it may involve competition between the teacher and an individual child or between the teacher and a group, or between two groups, one of which involves the teacher.

z, Teacher contact recognizes or promotes co-operation or working together

ch, Teacher allows the child a choice

The symbol ch is always in addition to a tally in some category of teacher contact. Teacher contact allows the child some choice in the determination of a detail where the broader decisions are included among routine activities or are otherwise made by the teacher or the group.

Except for the x, z, and ch categories, all categories of teacher contacts were mutually exclusive, so that the frequencies could be added. Total domination frequencies include the sum of the DC, DN, and DT contacts. Total integration frequencies include the sum of IN and IT contacts. An I-D ratio represents the ratio of a teacher's total integration contacts to her total domination contacts.

2. Child behavior.—Twenty-nine categories of child behavior were developed by J. E. Brewer for use in conjunction with the teacher-contact categories. The categories were mutually exclusive, so that the frequencies of different groups of categories could be added. Frequencies of behavior were recorded by checks or tallies. The following definitions, without the illustrative examples, are reproduced from Brewer (9, chapter ii).

N.H. Nervous habits

Nervous habits include putting fingers in the mouth, sucking on fingers, picking the nose, pulling on strands of hair, repetitious tapping of fingers, playing with parts of clothing, sucking or putting pencil or other objects in mouth, putting objects in nose, ears, etc., scratching, rubbing parts of body, moving glasses, etc.

L.Up Looking up

Looking up refers to looking up from a reading assignment or other work without evidence that the looking up has any relation to the work engaged in. Some children are seemingly absorbed in their reading or drawing and work steadily for many minutes without interruption. Other children do not read for more than a minute without looking up to watch their neighbors or the teacher or just to stare out of the windows.

L. Seat Leaves seat

Child leaves his seat voluntarily, i.e., without evidence of specific demand, request, or permission of the teacher.

Undet. Undetermined child-child verbal contacts

[A child makes a verbal contact with another child which, because the nature of the contact is undetermined, the observer is unable to classify in any other category.]

The individual who is spoken to is noted and a check made for each sentence or separate response spoken by the child being observed.

F.O. Playing with a foreign object

This refers to playing with toys or other objects during work periods. Some children bring knives, marbles, little dolls, and other small objects to school. They get them out of their pockets or desks to look at, to show to other children, or to play with. In some schoolrooms such behavior is not condoned and there is frequently disapproval and calling to attention for such behavior. Sometimes the teacher takes the objects away from the offender for the duration of the school day.

P. Conforming to teacher domination under DC or DN categories of teacher behavior

When a child does as he is told, follows instructions, his behavior is checked here. This is true except for response to the teacher's "lecture method" or to requests to recite. This category is wholly dependent on the definitions of teacher behavior.

N-(1-2). Child domination of other children

N-1. Demands, commands, uses force

Verbal demands to secure materials, forceful attempts to secure materials, defending, verbal commands or forceful attempts to direct behavior of other children are included here.

N-2. Attacks status

Criticizes, reproves, or places companion in a disadvantageous comparison, calls names.

M. Non-conforming to teacher's commands or demands: resistance to teacher domination

Child does not do what the teacher tells him to do, or he does what the teacher tells him not to do. This category includes the resistant behavior in response to the teacher's more immediate and direct contacts with this particular child. Apparent general non-conformity to class procedure without specific evidence of teacher domination was difficult to recognize and record reliably and was not included here.

L-(1-4). Response in recitation

L-1. Answers spontaneously

Child answers teacher's lecture method: questions (DN-10) spontaneously, i.e., without being specifically asked or without holding up hand or making other gesture.

L-2. Holds up hand

Child indicates by hand or gesture or words (e.g., "I can") that he wishes to answer a teacher's lecture method: question (DN-10).

L-3. Answers when called upon

Child answers teacher's question (DN-10) which is directed to him.

L-4. Fails to answer when called upon

Child may sit and say nothing, the teacher going on to someone else, or he may say, "I can't answer," or "I don't know."

K-(1-4). Problem solving

K-1. Seeks help

Child asks for help or announces a problem of his own.

K-2. Plans experiment

Child plans an experimental approach to his problem or to another's.

K-3. Contributes to own problem

K-4. Contributes to another's problem

J. Social contributions by the child

This category has six subdivisions in each of which separate records were kept to distinguish the child's behavior in which the social contribution was initiated by the child from behavior in which the child's social contribution was in response to others.

J-1. Tells experience

Child tells of own experience or ideas.

J-v-1. Voluntary: initiated by the child

J-r-1. In response to open question or invitation of teacher or others

J-2. Brings something to school

Bringing anything to school which the child was not required to bring was always checked under J-2 even though it might be obviously assisting

in the solution of someone else's problem as in K-4. (Recorded only if child presented the object during the period of observation.)

J-v-2. Voluntary: initiated by the child

J-r-2. In response to open invitation or question of teacher or others

J-3. Suggestions

Child makes a suggestion for new or different activity or starts a conversation by asking a question of another regarding interest or activity

J-v-3. Voluntary: initiated by the child

J-r-3. In response to others

J-4. Offers services

J-v-4. Voluntary: initiated by child. (Where problem has not been expressed or help asked for.)

J-r-4. In response to others

J-5. Holds up hand

Child indicates that he wants to do or say something (not in response to lecture method: question, DN-10.)

J-v-5. Voluntary: with no evidence of teacher's invitation

J-r-5. In response to open invitation or question (not DN-10) of teacher

J-6. Appreciation

Child expresses appreciation or approval of object or action of person

J-v-6. Voluntary

J-r-6. In response to others

E. Mental hygiene assumptions

1. Teacher contacts.—The following statement of the mental hygiene assumptions regarding the teacher's classroom behavior is quoted from Anderson (9, chapter i):

It is to be noted that the types of teacher contacts are defined in such a way that the first named type, DC, Domination in conflict, and the

last named, IT, Integration in working together, include behavior in which there is an active expression of motivation on the part of both the teacher and the child. In situations where the DC contacts are recorded, the child and the teacher are working definitely in opposition to each other. The end result for the child is commonly frustration of one kind or another. In IT contacts the teacher is using her imagination and resources to carry out her immediate educational objectives by adapting herself to an expressed interest or an activity of the child; she is working with him in the direction of that interest or activity. Seven mental hygiene assumptions have been made regarding teacher contacts.

1. It is assumed that the working with the child, the rapport, the integration in working together expressed in the IT contacts, is in general of high mental hygiene value.
2. It is assumed that the atomistic behavior, the working against each other, the intolerance and the conflict recorded under DC, Domination in conflict, is in general of extremely low mental hygiene value.
3. For DC contacts, Domination in conflict, it is assumed that individual contacts are "worse" from a standpoint of mental hygiene than are group contacts. It is assumed to be a more severe experience to be singled out alone for disapproval, frustration, reprimand, or punishment than to be similarly treated as a member of a group.
4. It is assumed that, in general, high frequencies of all forms of domination are symptoms of unhygienic relationships.
5. It is assumed that, in general, high frequencies of IN contacts, Integration, with no evidence of working together, are desirable, though from a mental hygiene standpoint they are less important than high frequencies of the IT contacts.
6. Another assumption is related to the Integration-Domination ratio. The crude I-D ratio is computed by dividing the mean total integration contacts by the mean total domination contacts. It is assumed that, in general, high crude I-D ratios are desirable.
7. The IT-DC ratio, obtained by dividing the IT contacts by the DC contacts, expresses the relationship between the frequency with which a teacher definitely works with the children and the frequency with which she definitely works against the children. It is the ratio of the purest form of recorded integrative behavior to the purest form of recorded dominative behavior, and may be termed the refined Integration-Domination ratio. It is possible to compute for the whole room a refined I-D (IT-DC) ratio for a teacher's group contacts or for her individual contacts, or it is possible from the totals for each child to compute separate refined I-D ratios for each individual child. It follows from the first and second assumptions above that high IT-DC ratios are desirable.

The mental hygiene assumptions, however, are regarded as not different from the assumptions which might concern the "democratic way of life." The point of view held here is that if one can define what he means by mental health and by democracy, then he will discover that whatever contributes to the democratic interplay between human beings is ipso facto a contribution to mental hygiene. Likewise, whatever in human relations is undemocratic or dictatorial tends to work adversely to the mental health of those persons involved. From these assumptions it follows that the categories of human behavior which give a mental hygiene evaluation of a schoolroom constitute at the same time measures of the democratic processes and of the dictatorial practices in the school.

2. Child behavior.—The following statement of mental hygiene assumptions regarding the classroom behavior of children is taken from J. E. Brewer (9, chapter 11):

1. It is assumed in general that high frequencies in category J, Social contributions by the child, are desirable.

2. It is assumed that there is a higher mental hygiene value in those social contributions which are voluntary, and which, therefore, would be expressions of the child's spontaneity and initiative, than in the social behavior which comes as a response to a request or invitation from another. There is some evidence of a need to qualify this assumption regarding the J-v categories as defined. Some of the voluntary social behavior has seemed to be expressions of highly competitive attempts to "get ahead" of someone else. To the extent that the voluntary social behavior as recorded expresses a lack of consideration for others it is not integrative behavior.

3. Expressions of spontaneity and initiative in social behavior have mental hygiene value to the extent that they do not act as a curb to the initiative and spontaneity in others. This hypothesis merely assumes that the operation of the democratic processes or the application of the golden rule are valued mental hygiene processes.

4. High frequencies of problem-solving behavior as defined and recorded are assumed to be desirable.

5. It is assumed that high frequencies of either conforming or nonconforming are undesirable.

6. It is assumed that high frequencies or increases in domination of other children are undesirable.

It is difficult to make mental hygiene assumptions regarding several categories of child behavior which seem not to be directly related to the teacher's behavior. Nervous habits as defined seem to be a part of normal child behavior. However, extremely high frequencies or large increases in nervous habits should probably be regarded as undesirable.

Looking up at seat work, leaves seat, and undetermined child-child contacts were descriptive categories containing many psychological unknowns.

Playing with foreign objects, to the extent that it represents resistance against restraint or lack of interest in schoolwork, should probably be regarded as a symptom of an unhealthy situation.

III. Reliability of Observers

The 1939 data in this study were gathered by four observers who are designated X, Y, P, and Q.[3] Observers X and Y had previously established their reliability as observers and had used the same observation blank in recording data for two other studies in the fall. Observers P and Q were being used in a further project of studying the difficulties involved in taking untrained graduate students and training them to become reliable in these methods of recording. After their training period and the establishing of their reliability, observers P and Q gathered data only

[3] Observer X was Joseph E. Brewer, General Education Board Fellow in Psychology; observer Y was Mary Frances Reed; observers P and Q were graduate students on N.Y.A. research assignment.

in Room 2C39. Of the total of sixty-four hours of observation in this room, observer P observed for nineteen hours, thirty-five minutes, and observer Q for seven hours, ten minutes.

In gathering data for the purpose of computing reliability of observers, two observers working independently made simultaneous records of the behavior of the same child and the teacher. Reliability of observers was then determined separately for teacher contacts and for child-behavior categories by computing the percentage of agreement between the two sets of simultaneous records. The percentage of agreement was computed by dividing twice the total number of tallies in agreement by the sum of the tallies for the two observers. Percentages of agreement were calculated for each category of behavior separately and for certain combinations of behavior categories. Only consecutive records were used. The method of computing percentage of agreement has been explained in detail by Brewer (9, chapter ii).

Simultaneous observations were made by observers X and Y in each of the two second-grade rooms and in each of the two third-grade rooms, and by X and P and by observers Y and Q in the one second-grade room in which P and Q worked. For X and Y, since the percentages of agreement computed separately for each room were comparable, the data for the two second grades and for the two third grades were combined. The reliability of observers, as shown by percentages of agreement, is given in Table 2 for teachers' group and individual contacts, and in Table 3 for categories of child behavior.

A. Teacher contacts

In the second grade, observers X and Y observed fifteen children consecutively for five-minute periods each in Room C and sixteen children in Room D. The combined data yielded percentages of agreement for total contacts of 90 per cent for teachers' group contacts and 93 per cent for teachers' individual contacts. The totals for DC, DN, DT, IN, and IT types of contacts showed percentages of agreement of 85 per cent or above for group contacts and 87 per cent or above for individual contacts. When the computations were made for separate categories, there were for group contacts only two categories, and for individual contacts only one that showed lower than 80 per cent agreement, and these each had very low frequencies.

In the third grade, observers X and Y observed consecutively twenty-five children each for five minutes in Room C and twenty-seven children in Room D, making a combined total of 260 minutes for the two third-grade rooms.

For total contacts the observers had 93 per cent agreement for group contacts and 86 per cent agreement for individual contacts.

The totals for type of contact in the third grade, with two exceptions, showed for both group and individual contacts percentages of agreement over 80 per cent. One of the exceptions was IT-type contacts, which

TABLE 2

PERCENTAGES OF AGREEMENT OF OBSERVERS IN RECORDING TEACHERS' CONTACTS

Category	Group Contacts											
	Second Grade			Third Grade			Second Grade			Second Grade		
	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement
	X	Y		X	Y		X	P		Q	Y	
Minutes of Observation.	155		...	260		...	90		...	75		...
DC- 1.....	1	1	100	1	1	100	..	..	...	3	3	67
2.....	..	..	...	..	..	...	..	..	...	..	..	...
3.....	..	..	...	..	..	...	..	..	...	..	..	...
4.....	..	..	...	..	..	...	..	..	...	..	..	...
5.....	14	17	90	21	24	89	1	0	0	1	2	67
6.....	3	3	67	4	2	67	..	..	...	0	1	0
7.....	..	..	...	1	1	100	..	..	...	3	4	86
11.....	..	..	...	..	..	...	..	..	...	..	..	...
DC-Total.....	18	21	87	27	28	87	1	0	0	7	10	71
DN- 1.....	88	101	92	230	247	95	28	30	93	20	22	90
6.....	12	13	84	26	22	92	2	2	100	2	2	100
7.....	10	9	79	20	18	79	..	..	...	9	9	89
8.....	2	2	100	5	4	89	..	..	...	1	1	100
DN-(1-8).....	112	125	90	281	291	93	30	32	94	32	34	91
9.....	80	89	89	193	223	92	24	18	81	13	19	81
10.....	79	78	93	77	83	95	32	25	88	20	19	92
DN-(9-10).....	159	167	91	270	306	93	56	43	85	33	38	87
DN-Total.....	271	292	91	551	597	93	86	75	88	65	72	89

DT- 4.....	1	1	100	..	..	..	..	..	...	..	..	...
13.....	..	..	...	..	..	..	..	..	...	..	..	...
16.....	..	..	...	7	6	92	1	0	0	..	..	...
23.....	..	..	...	..	..	..	..	..	...	..	..	...
DT-Total.....	1	1	100	7	6	92	1	0	0	..	..	...
Total Domination..	290	314	90	585	631	93	88	75	87	72	82	87
IN-18.....	1	1	100	1	0	0	..	..	...	10	12	91
19q.....	19	23	81	11	10	95	17	13	87	36	43	89
19s.....	33	37	89	46	47	92	13	10	70	59	61	93
IN-Total.....	53	61	85	58	57	92	30	23	79	105	116	91
IT-14.....	..	..	...	..	..	..	..	..	...	..	..	...
16.....	..	..	...	..	..	..	..	..	...	..	..	...
18.....	..	..	...	..	..	..	..	..	...	..	..	...
19q.....	..	..	...	..	..	..	..	..	...	..	..	...
19s.....	..	..	...	..	..	..	..	..	...	..	..	...
20.....	4	3	86	5	6	73	3	3	100	1	1	100
IT-Total.....	4	3	86	5	6	73	3	3	100	1	1	100
Total.. Integration.	57	64	85	63	63	90	33	26	81	106	117	91
Total.....	347	378	90	648	694	93	121	101	86	178	199	90

TABLE 2 (CONT.)

PERCENTAGES OF AGREEMENT OF OBSERVERS IN RECORDING TEACHERS' CONTACTS

Category	Individual Contacts											
	Second Grade			Third Grade			Second Grade			Second Grade		
	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement
	X	Y		X	Y		X	P		Q	Y	
Minutes of Observation	155		...	260		...	90		...	75		
DC- 1.....	1	1	100	0	1	0						
2.....	..	..	...	..	..	...	1	1	100	..	..	...
3.....	..	..	...	..	..	...	..	..	...	..	..	...
4.....	..	..	...	1	0	0	..	..	...	..	..	...
5.....	1	1	100	1	1	100	2	1	67	..	..	...
6.....	..	..	...	1	0	0	1	1	100	..	..	...
7.....	1	1	100	..	..	...	0	1	0	..	..	...
11.....	..	..	...	1	1	100	..	..	...	..	..	...
DC-Total.....	3	3	100	4	3	57	4	4	75	..	..	...
DN- 1.....	7	9	88	7	9	88	5	5	100	..	..	...
6.....	..	..	...	1	1	100	..	..	...	..	..	...
7.....	..	..	...	..	..	...	..	..	...	..	..	...
8.....	..	..	...	..	..	...	2	1	67	..	..	...
DN-(1-8).....	7	9	88	8	10	89	7	6	92	..	..	...
9.....	3	3	67	6	8	86	3	2	40	..	..	...
10.....	6	6	100	4	6	80	5	5	100	..	..	...
DN-(9-10).....	9	9	89	10	14	83	8	7	80	..	..	...
DN-Total.....	16	18	87	18	24	86	15	13	86	..	..	...

DT- 4.....	..	..	...	..	..	...	..	..	...	..	..	...
13.....	1	1	100	6	6	100	3	1	50	..	..	...
16.....	1	1	100	4	3	86	..	..	...	..	..	...
23.....	..	..	...	2	2	100	..	..	...	..	..	...
DT-Total.....	2	2	100	12	11	96	3	1	50	..	..	...
Total Domination..	21	23	91	34	38	86	22	18	82	..	..	...
IN-18.....	1	1	100	..	..	...	2	2	100	1	1	100
19q.....	1	1	100	..	..	...	3	2	80	1	1	100
19s.....	1	1	100	1	1	100	3	2	80	..	..	...
IN-Total	3	3	100	1	1	100	8	6	86	2	2	100
IT-14.....	3	3	100	9	8	94	3	3	100	1	1	100
16.....	..	..	...	..	..	..	2	2	100	..	..	...
18.....	..	..	...	..	..	..	7	6	77	..	..	...
19q.....	..	..	...	0	2	0	1	1	100	..	..	...
19s.....	1	1	100	4	3	86	..	..	...	..	..	...
20.....	..	..	...	..	..	..	1	1	100	..	..	...
IT-Total.....	4	4	100	13	13	85	14	13	89	1	1	100
Total Integration	7	7	100	14	14	86	22	19	88	3	3	100
Total.....	28	30	93	48	52	86	44	37	85	3	3	100

TABLE 3

PERCENTAGES OF AGREEMENT OF OBSERVERS IN RECORDING CHILD BEHAVIOR

Category	Second Grade			Third Grade			Second Grade			Second Grade		
	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement	Frequency for Observer		Percentage of Agreement
	X	Y		X	Y		X	P		Q	Y	
Minutes of Observation	155		...	260		...	90		...	75		...
N.H.	126	137	90	320	358	89	59	59	97	99	116	90
L.Up	41	46	91	127	158	85	32	35	96	11	10	86
L.Seat	13	14	96	11	11	100	5	5	100	2	2	100
Undet.	111	122	90	100	104	85	23	27	92	19	23	86
F.O.	3	2	80	4	4	75	2	2	100	1	2	67
P	36	33	90	124	115	89	22	21	98	7	5	83
N-1	3	3	100	2	2	100	1	1	100	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...
N-Total.....	3	3	100	2	2	100	1	1	100	...	...	...
M	1	1	100	1	4	40	...	...	...	...	...	...

L-1	2	3	40	6	5	91	9	13	82	...	...	...
2	13	12	88	23	25	92	10	10	100	1	1	100
3	11	13	75	24	23	85	6	7	77	...	...	...
4	1	1	100	2	2	50	1	1	100	...	...	...
L-(1-4)	27	29	79	55	55	86	26	31	87	1	1	100
K-1	5	5	80	11	10	95	5	5	100	1	1	100
2	...	...	...	...	...	...	...	...	...	...	...	...
3	1	1	100	1	1	100	...	...	...	...	...	...
4	2	1	67	0	1	0	...	...	...	...	...	...
K-(1-4)	8	7	80	12	12	92	5	5	100	1	1	100
J-v-1	3	4	86	7	7	86	1	1	100	1	2	67
2	...	...	...	...	...	...	...	...	...	...	...	...
3	5	4	89	1	1	100	5	3	75	2	2	100
4	...	...	...	...	...	...	1	1	100	...	...	...
5	1	1	100	...	...	...	1	1	100	5	6	91
6	2	2	100	...	...	...	...	...	...	...	...	...
J-v-Total ...	11	11	91	8	8	88	8	6	86	8	10	89
J-r-1	2	3	80	...	...	...	10	8	89	5	7	83
2	...	...	...	...	...	...	...	...	...	...	...	...
3	3	2	80	...	...	...	8	8	100	1	1	100
4	...	...	...	...	...	...	...	...	...	2	2	100
5	1	1	100	...	...	...	10	11	95	6	7	92
6	...	...	...	...	...	...	...	...	...	1	1	100
J-r-Total ...	6	6	83	...	...	...	28	27	95	15	18	91
Total	386	411	90	764	831	88	211	219	94	164	188	89

showed 73 per cent agreement. Based on small frequencies, this lower percentage was somewhat offset by the 85 per cent agreement for the same type of individual contacts. The other exception was individual DC-type of contacts, which had 57 per cent agreement. This was based on four and three instances recorded, respectively, by observers X and Y over a period of four hours and twenty minutes of consecutive observations; it may be compared with the 87 per cent agreement in recording the same type of contacts of a group nature.

The percentages of agreement for observers P and Q are comparable with those for X and Y together, except for a few instances in which low frequencies of one or two tallies made a great difference in the percentages. Although it appears that the program was such that no individual dominative contacts were recorded during the observations of observers Q and Y, the percentages of agreement for single categories of group dominative contacts and for the types of group domination are evidence of the reliability of observers Q and Y in distinguishing and recording these kinds of teacher contacts.

All teacher contacts, as recorded on the blank, were mutually exclusive except three which were recorded by the addition to a tally of one of three symbols: x, when the teacher fostered competition between or among the children; z, when she fostered co-operation; and ch, when she gave the child a choice. Each of these symbols could be recorded with a group contact or with an individual contact. The percentages of agreement of the four observers in recording these contacts simultaneously in the four different rooms were computed.

In retrospect, the observers thought that these contacts were very infrequent except with teacher 3D39. The records showed that either the contacts were infrequent or the observers were fairly consistently unaware of them when they occurred, or that both circumstances obtained.

The infrequently recorded data for z and ch contacts in the main study have been discarded. When all of the x contacts with the group recorded by observers X and Y are combined, they show 76 per cent agreement for the total. The data for x, recorded by observers X and Y, have been retained because of a relatively high fostering of competition among the children by one teacher.

It cannot be said that observers P and Q have had sufficient opportunity to demonstrate reliability in recording x, z, and ch contacts.

B. Child behavior

The percentages of agreement of observers in recording child behavior are given in Table 3. Although several of the categories are treated in certain arbitrary groupings as well as individually, the percentages of agreement are sufficiently high to justify the treatment of each of the categories by itself.

IV. Integration-Domination Ratios

Integration-Domination ratios of teacher contacts are computed by dividing mean integration frequencies by mean domination frequencies. The I-D ratios give no indication as to the amount or frequency of the teacher's activity. It is obvious that if one teacher used twice as much, or even several times as much domination as another teacher, if she also used proportionately greater integration frequencies the two teachers would have the same I-D ratios.

It could happen that in one schoolroom all the children averaged as many dominative contacts as integrative contacts. In their contacts with the teacher they would thus have encountered a certain number of experiences in which they were encouraged to express themselves, to participate in some joint activity, and to share in the making of decisions, and in which the teacher was building on to the children's own expressed interests and trying to work with them. And they would have encountered the same number of situations in which they were frustrated or were told to do or not to do something, or in which a decision which concerned them was made by the teacher without consulting the children's interests. In such a schoolroom the I-D ratio would be 1.00.

It is assumed that, other things being equal, when a child had more frequent integrative contacts than dominative contacts from the teacher the psychological environment would be different from that existing when a child had several times as many dominative contacts as integrative.

The I-D ratios are coarse measures of general tendencies of the teacher's behavior toward the children. As such they are offered here to show some of the differences between the teachers who are included in this study. The I-D ratios should be kept in mind in making comparisons of the differences in mean frequencies of teacher contacts and of child behavior.

Table 4 presents for each teacher in this study the I-D ratios of the mean frequencies of both group and individual contacts. Separate I-D ratios have been computed for the teacher's mean frequencies with the entire number of children in her room and with the number of children who were consecutively studied in the second and third grades. It is noticeable in Table 4 that there is a range of I-D ratios from 0.12 to 1.67. If group and individual contacts are considered separately, the ranges will be found to be 0.80 to 1.67 for group contacts and 0.12 to 0.22 for individual contacts. In short, the ratios tended to be lower for group than for individual contacts.

A second fact that one can notice in Table 4 is that, when the data for contacts with the children who were not studied consecutively are excluded from the computations of I-D ratios, there is very little change in ratio as compared with that for the entire group. The contrasts between teachers 2C and 2D are quite apparent in the I-D ratios.

TABLE 4

INTEGRATION—DOMINATION RATIOS

Teacher	Type of Contact	1938	1938c	1939	1939c
2C	Group	0.77	0.80	0.38	....
	Individual	1.42	1.33	0.60	....
2D	Group	0.19	0.19	0.12	....
	Individual	0.22	0.22	0.22	....
3C	Group	....	....	0.27	0.29
	Individual	....	....	1.28	1.67
3D	Group	....	....	0.38	0.39
	Individual	....	....	0.47	0.47

In 1938 teacher 2C used 30 per cent more group domination than group integration and actually higher frequencies of individual integrative contacts than individual dominative contacts. Teacher 2D used over five times as many group dominative contacts as group integrative contacts, and, in her direct contacts with children as individual human beings, her domination outnumbered her co-operative or integrative contacts almost $4\frac{1}{2}$:1.

Teachers 3C and 3D also appeared to be different. Teacher 3C tended to use proportionally more domination in her group contacts and proportionally more integrative contacts in her person-to-person relations with individual children. Teacher 3D, however, used about the same proportions for both group and individual contacts, that is, from two to two and one-half times as much domination as integration in both group and individual contacts.

V. Comparison of Teachers and Comparison of Rooms of Children by the Method of Rank Order Correlation

The method of rank order correlation offers another means of determining the degree of similarity in the trends of behavior of two teachers or of two groups of children. Sums for each teacher separately were computed for each category of the teacher's contacts with all the children; the sums were arranged in rank orders of categories, from the category having highest frequency of teacher contacts to the category having lowest frequency. Rank order coefficients of correlation between teachers were computed separately for group contacts and for individual contacts.

Similarly, the total frequencies for all children were computed for each category of child behavior. These totals were arranged in rank

order, from the category having highest frequency of child behavior to the category having lowest frequency.

By this rank order method two kinds of comparisons could be made: one comparison horizontal in point of time and another comparison vertical in point of time. The horizontal comparisons were made by correlating the contacts of teachers C and D the same year, or by correlating the frequencies of child behavior of two rooms of children the same year.

The vertical comparisons were made by correlating teacher contacts in successive samplings for the same teacher, or by correlating the teacher contacts of the second- and third-grade teachers with the same children from samplings also taken a year apart. Vertical comparisons of child behavior were made also by rank order correlations of the frequencies by categories for a room of second-grade children with the frequencies by categories for the same children a year later when they were with a third-grade teacher. The coefficients of correlation are given in Table 5.

TABLE 5

RANK ORDER CORRELATIONS

Rooms	Teacher Contacts		Child Behavior
	Group	Individual	
2C38 - 2D38	0.75	0.52	0.87
2C39 - 2D39	0.87	0.75	0.89
2C38 - 2C39	0.80	0.86	0.86
2D38 - 2D39	0.84	0.85	0.88
2C38c - 3C39c	0.72	0.85	0.88
2D38c - 3D39c	0.85	0.72	0.79
3C39c - 3D39c	0.88	0.81	0.92

The coefficients in Table 5 range from 0.52 to 0.92, with a median of 0.85. If the two extreme coefficients are excepted, the nineteen remaining coefficients fall within a relatively narrowly defined cluster ranging from 0.72 to 0.89.

Not only the positive signs but the high values of the coefficients indicate that both for teacher contacts, whether group or individual, and for child behavior the general patterns of behavior, as shown by the relative frequencies in these categories, were similar. This similarity in general pattern of behavior was found in comparing one teacher with herself in consecutive years with different children and was found in comparing second- and third-grade teachers in consecutive years with the same

children. In children's behavior, similarity of relative patterns was found in comparing two groups of children in consecutive years with the same teacher and in comparing the same group of children in consecutive years with different teachers.

The coefficient of 0.52 for teachers' individual contacts in the comparison of 2C38 with 2D38 was low because of the relatively high frequencies of dominative contacts and relatively low frequencies of integrative contacts of teacher 2D38. The fact that the coefficient for a similar comparison in 1939 was 0.75 is to be explained in part by the fact that in 1939 teacher 2C showed an increase in individual domination.

Rank correlations, however, could show a perfect positive relationship, yet reveal nothing as to the relative activity of one room or teacher as compared with the other. The levels of activity at which teachers or children behaved in the schoolroom must be compared for the significance of differences by testing mean frequencies.

Rank order coefficients likewise tell nothing as to the consistency with which individual children in the room behaved in consecutive years with different teachers or as to the consistency with which different teachers behaved toward the same individual children. Such consistency has been tested by Pearson product-moment correlations for teacher contacts and for child-behavior categories and will be presented in appropriate comparisons below. An examination of the mean frequencies will reveal that, notwithstanding the high comparability shown in rank orders of categories, there were a number of significant differences among the teachers and among the children in the measurement of their behavior for both years.

VI. Comparison of Room 2C with Room 2D in Respect to the Behavior of Teachers and of Children in 1938; and Comparison of the Rooms Again with the Same Teachers but Different Children in 1939

A. Comparison of mean frequencies of teachers' contacts in 1938

The method of testing the significance of the differences between mean frequencies of teacher contacts or of types of child behavior was to determine the ratio between the obtained difference and the standard error of the difference. When the data did not represent correlated measures, the formula employed for the standard error of the difference was:

$$\sigma_{m_x - m_y} = \sqrt{\sigma_{m_x}^2 + \sigma_{m_y}^2} \qquad \text{(15, p. 162)}$$

When the comparison involved correlated measures, as between the mean frequencies of contacts of two teachers with the same group of children or between the mean frequencies of types of behavior of the same children, the formula, taken from Peters and Van Voorhis, was:

$$\sigma_{m_x - m_y} = \sqrt{\sigma_{m_x}^2 + \sigma_{m_y}^2 - 2r_{xy}\sigma_{m_x}\sigma_{m_y}} \qquad \text{(15, p. 162)}$$

In the interpretation of the data in this study, when a difference is said to be significant or statistically reliable, the rather conservative criterion of reliability of requiring the obtained difference to be three or more times the standard error of the difference has been used.

The mean frequencies of teachers' group and individual contacts for 1938 and for 1939, together with respective critical ratios of the differences between teachers for each year, are given in Table 6. The data for 1938 are taken from Brewer, Tables 15 and 16 (9, chapter ii).

1. Teachers' group contacts.—Without exception, teacher 2D had higher frequencies of all types of dominative contacts and lower frequencies of integrative contacts. The obtained differences were large and were all over three times their respective standard errors of the differences, except for DT, domination in working together, in which the difference, with 99.5 chances in 100 that it represented a true difference greater than zero, may be regarded as virtually significant.

Teacher 2D showed such high frequencies of group domination that they offset the reverse relationship for integrative contacts and gave teacher 2D a mean frequency of total group contacts higher than that for teacher 2C; the critical ratio of the difference was 2.1, which means that there are 98 chances in 100 that the obtained difference represented a true difference greater than zero.

It cannot be concluded from the data given in Table 6 that, in respect to child behavior, the frequencies of the teachers' group contacts represented either cause or effect. It can be said, however, that the two teachers showed widely divergent psychological techniques in dealing with their children and that, in respect to these rather high mean frequencies of group contacts per child, the children in these two rooms in 1938 lived in significantly different and consistently different psychological environments.

2. Teachers' individual contacts.—The mean frequencies per child of teachers' individual contacts tended to be smaller than the mean frequencies of group contacts, but the differences between teachers 2C and 2D were without exception in the same direction. The differences for all types of individual dominative contacts and for total individual dominative contacts were all statistically reliable with the one exception, as was found for group dominative contacts.

In integrative contacts both teachers showed low and practically identical mean frequencies in IN contacts, which represent an attempt by the teacher to enlist the interest or activity of a child but to allow him a choice in the matter. In IT contacts the difference in favor of teacher 2C was large and statistically reliable. Total individual contacts in 1938 showed a larger mean frequency per child for teacher 2D, whose individual dominative contacts outnumbered her integrative contacts more than

TABLE 6

COMPARISON OF THE MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF TWO TEACHERS WITH DIFFERENT GROUPS OF SECOND-GRADE CHILDREN IN 1938, AND SIMILAR COMPARISONS OF THE SAME TWO TEACHERS AGAIN WITH DIFFERENT CHILDREN IN 1939 (OBSERVATION TIME: TWO HOURS PER CHILD.)

Type of Teacher Contact	1938*		1939				C.R.	
	Teacher		Teacher					
	2C38 N = 30	2D38 N = 29	2C39 N = 27		2D39 N = 28			
	Mean	Mean	Mean	S.D.	Mean	S.D.	1938	1939
	Group Contacts							
DC	4.4	7.9	8.2	4.7	12.0	5.5	3.6†	2.8†
DN-(1-8)	72.3	115.1	83.4	15.4	86.3	23.1	7.2†	0.5†
DN-(9-10)	54.5	93.7	101.9	25.6	102.0	27.6	5.7†	0.0†
Total DN	126.9	208.8	185.3	33.3	188.3	39.9	7.6†	0.3†
DT	1.6	3.0	1.4	1.3	1.6	1.5	2.6†	0.6†
Total domination	132.9	219.7	194.9	34.2	201.9	40.0	7.8†	0.7†
IN	64.0	38.8	67.6	20.5	23.7	10.4	10.9	10.0
IT	38.1	2.2	5.6	2.8	0.7	0.9	10.0	8.8
Total integration	102.3	41.1	73.2	20.5	24.4	10.5	12.7	11.1
Total contacts	235.1	260.7	268.0	34.8	226.3	41.9	2.1†	4.0
	Individual Contacts							
DC	1.1	7.9	2.8	2.9	4.6	3.3	5.3†	2.2†
DN-(1-8)	4.2	9.4	6.3	4.3	6.6	4.8	3.8†	0.3†
DN-(9-10)	2.9	6.2	10.1	7.9	9.8	9.6	3.2†	0.1
Total DN	7.2	13.6	16.4	11.5	16.4	13.7	4.4†	0.0
DT	1.9	3.7	3.2	2.4	7.8	5.2	1.7†	4.3†
Total domination	10.2	25.2	22.3	12.8	28.8	19.1	5.9†	1.5†
IN	2.6	2.3	4.7	5.5	1.6	1.4	0.4	2.9
IT	11.6	3.3	8.7	8.1	4.7	4.5	4.9	2.3
Total integration	14.4	5.7	13.5	12.5	6.3	4.8	4.5	2.8
Total contacts	24.6	30.8	35.8	21.7	35.1	22.5	1.7†	0.1

*Data for 1938 taken from J. E. Brewer, Tables 15 and 16 (9, chapter ii). Standard deviations for 1938 data are not reproduced here.

†Indicates that the mean for teacher 2D was higher in the comparison.

four to one. This ratio was in contrast with the ratio for teacher 2C, whose mean frequency of individual dominative contacts was actually lower than her mean frequency for integrative contacts.

A further contrast between teachers 2C and 2D can be noted in comparing the mean frequencies of group and individual contacts under DC, domination in conflict. Each tally under domination in conflict represents from the child's point of view a frustrating experience, as this term is usually employed. For teacher 2D there were twice as many conflict situations between the teacher and a child as a member of a group, in which the teacher dominated or attempted to dominate the group. Also teacher 2D had eight times as many conflict situations in which the teacher singled out an individual child for domination as had teacher 2C.

B. Comparison of mean frequencies of teachers' contacts in 1939

Probably one of the best ways of introducing controls into the measurement of teacher contacts and child behavior would be to take such contrasting teachers as 2C and 2D in 1938, let them change rooms, and take new measures of the behavior of teachers and children after some period of adjustment. The adjustment required of each teacher immediately after the change would be interesting to measure, because the children themselves had shown a number of significant differences in their schoolroom behavior. Such a change was administratively out of the question. A practical but less controlled procedure was to obtain an answer to the question of whether or not the significant differences between teachers 2C and 2D would persist through the following year when each teacher had a new group of second-grade children. The measurement of teacher contacts is presented first and then the corresponding data on children's behavior is examined.

1. Teachers' group contacts.—In the comparison of mean frequencies of group contacts of teachers 2C and 2D the differences shown in Table 6 for all but total group contacts were in the same direction for 1939 as for 1938. For all types of group dominative contacts, except the one having lowest frequencies, there was a general increase for teacher 2C; in DN-(1-8) teacher 2D showed a considerable decrease. The net result was that, except for domination in conflict, none of the differences for group dominative contacts between teachers 2C and 2D was significant, although the means were consistently higher for teacher 2D.

The mean frequencies for group domination in conflict increased for both teachers in 1939, but the critical ratio of 2.8 means that there were better than 99.7 chances in 100 that the higher frequencies of teacher 2D represented a true difference greater than zero. In total group dominative contacts teacher 2C showed a considerable increase in 1939 and teacher 2D showed a decrease. The changes for each teacher in consecutive years will be examined in more detail below.

In total group integrative contacts, although both teachers showed a considerable decrease in 1939, the mean frequencies for teacher 2C were still higher, as they were in 1938, and the difference was again statistically reliable.

2. Teachers' individual contacts.—It can be seen in Table 6 that, in respect to individual contacts, in 1939 the directions of the differences between teachers 2C and 2D were not unlike those for group contacts. When the differences were considerable, teacher 2D had higher mean frequencies of individual domination and lower mean frequencies of individual integrative contacts.

In individual dominative contacts teacher 2C showed an increase in all types in 1939, more than doubling her mean frequency for total individual domination. She still had, however, a lower mean frequency for total individual domination than had teacher 2D; the critical ratio of 1.5 indicates 93 chances in 100 that the obtained difference was statistically reliable. Although teacher 2C increased her mean frequencies of individual domination in conflict, and teacher 2D showed a corresponding decrease, teacher 2D still had the higher mean, the difference approaching statistical reliability.

In spite of the fact that in 1939 teacher 2C decreased in total integrative contacts, while teacher 2D showed an increase, teacher 2C had a mean higher than that for teacher 2D, representing a difference that was virtually significant.

The mean frequencies for total individual contacts in 1939 were practically identical for both teachers.

C. Comparison of child behavior in 1938

Table 7 gives the mean frequencies of child behavior by categories for 1938 and 1939, together with respective critical ratios of the differences between rooms of children for each year. The data for 1938 are taken from Brewer, Table 17 (9, chapter ii). The rank-order correlation between the mean frequencies in the two rooms for 1938 is 0.87. Although the relative order of the categories was similar in both rooms, there were considerable differences in the levels of activity as shown by the comparison of mean frequencies.

The critical ratios for 1938 followed by a dagger in Table 7 indicate differences in which the children in Room 2D had higher mean frequencies. By searching out among these marked critical ratios those which are 3 or more, one can note those categories of child behavior in which significantly higher frequencies accompanied higher teacher domination and lower teacher integration. Thus the children who were exposed to greater domination and less integration from the teacher showed significantly more looking up at seat work, more undetermined child-child contacts, more conforming, and more nonconforming, as well as higher frequencies that were virtually significant for categories of playing with foreign objects and holding up hands as a response in recitation.

The children in Room 2C, who received higher frequencies of integrative contacts and lower frequencies of domination, had higher frequencies in all the J-v categories, which may be regarded as measures of spontaneous behavior in the nature of a social contribution by the child. Nine of

the ten critical ratios for social contributions, both voluntary and in response to others, represented significant differences. The children in Room 2C also showed higher frequencies which represented differences approximating significance in contributes to own problem, contributes to other's problem, and answers spontaneously in recitation. They also showed higher frequencies of nervous habits and, on the basis of very low frequencies in both rooms, a difference approaching significance in attacks status of other child.

D. Comparison of child behavior in 1939

It was shown in Table 6 that in 1939 teachers 2C and 2D were in a less contrasting position than in 1938 for group and individual contacts of both domination and integration. In domination, in which differences existed in 1939, they still represented higher frequencies of both group and individual dominative contacts for teacher 2D. Teacher 2C was still higher in integrative contacts, the differences being large and statistically reliable or virtually so. It would seem, therefore, that, in spite of certain variations between 1938 and 1939, the measures have revealed some sort of basic differences in the personalities of these two teachers.

The critical ratios in Table 7 show that in 1939 there were no significant reversals in relative mean frequencies in rooms 2C and 2D. There were some differences significant or approaching significance in 1938 which in 1939 were not significant. Such changes were found in nervous habits, conforming, attacks status of other child, contributes to own problem, contributes to other's problem, and holds up hand in response to a question or invitation by the teacher. These are categories in which the two rooms of children in 1939 more nearly resembled each other than did the two rooms in 1938.

There were other changes from nonsignificant differences in 1938 to differences that were significant or that approached significance. Such changes were found in commands other child, dominates other children, answers when called in recitation, all of which showed higher frequencies for Room 2D. These categories were those in which the two rooms in 1939 were farther apart in mean frequencies than were the two rooms in 1938.

Without exception, for the ten critical ratios for the J-v categories the children in Room 2D in 1939 again showed lower frequencies in these expressions of spontaneous behavior in the nature of a social contribution. Three of the ten critical ratios represented significant differences.

E. Recapitulation and interpretation

From the comparison of Room 2C with Room 2D in respect to the behavior of teachers and of children in 1938 and the comparison of the rooms again with the same teachers but with different children in 1939 the following general statements may be made:

TABLE 7

COMPARISON OF THE MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF TWO GROUPS OF SECOND-GRADE CHILDREN WITH DIFFERENT TEACHERS IN 1938, AND SIMILAR COMPARISONS OF TWO ADDITIONAL GROUPS RESPECTIVELY WITH THE TWO SECOND-GRADE TEACHERS IN 1939 (OBSERVATION TIME: TWO HOURS PER CHILD.)

Child-Behavior Categories		1938*		1939				C.R.	
		Room		Room					
		2C38 N=30	2D38 N=29	2C39 N=27		2D39 N=28			
		Mean	Mean	Mean	S.D.	Mean	S.D.	1938	1939
N.H.	Nervous habits	50.5	44.1	96.0	20.0	89.1	30.3	1.4	1.0
L.Up	Looking up	20.1	34.8	31.2	10.7	54.1	20.5	5.9†	5.2†
L.Seat	Leaves seat	5.9	6.0	5.7	3.5	5.1	2.6	0.1†	0.7
Undet.	Undetermined child—child contacts	33.4	63.4	55.9	27.1	94.9	33.6	4.8†	4.7†
F.O.	Foreign objects	0.5	1.7	1.4	2.1	2.2	2.7	3.0†	1.3†
P	Conforming	26.5	44.7	36.4	10.5	34.4	14.7	5.3†	0.6
N-1	Commands other child	1.3	1.6	1.4	0.2	3.0	4.1	0.5†	1.6†
N-2	Attacks status of other child	0.2	0.0	0.3	0.6	0.4	0.7	1.6	0.2†
N-(1-2)	Dominates other children	1.5	1.6	1.6	2.1	3.4	4.1	0.2†	2.1†
M	Nonconforming	1.8	8.4	0.9	1.2	2.1	2.0	4.3†	2.6†

L-1	Answers spontaneously	2.5	1.1	6.6	6.8	1.5	1.8	2.6	3.9
L-2	Holds up hand	6.6	11.7	10.7	9.4	23.5	12.7	2.5†	7.5†
L-3	Answers when called	4.9	5.2	7.6	4.8	13.2	9.8	0.3†	3.7†
L-4	Fails to answer	0.2	0.4	0.3	0.7	0.6	1.3	0.9†	0.3†
L-(1-4)	Response in recitation	14.3	18.3	25.2	17.3	38.9	21.8	1.4†	2.6†
K-1	Seeks help	2.6	3.1	5.1	5.6	4.3	4.4	0.7†	0.6
K-3	Contributes to own problem	2.8	1.7	0.2	0.8	0.6	1.1	2.7	0.4†
K-4	Contributes to other's problem	11.6	7.1	3.0	3.9	4.3	4.0	2.0	1.0†
K-(3-4)	Contributes to own and other's problems	....	....	3.7	3.9	4.8	4.2	....	1.1†
K-(1-4)	Problem solving	17.0	11.9	8.8	7.1	9.1	6.9	2.0	0.2†
J-v	Voluntary:								
J-v-1	Tells experience	2.7	1.2	4.2	5.5	2.3	4.1	1.5	1.4
J-v-3	Suggestions	2.1	0.3	3.3	5.6	0.8	3.3	4.3	1.9
J-v-5	Holds up hand	3.2	1.0	1.7	2.8	0.4	0.7	3.6	1.3
J-v-6	Appreciation	0.9	0.1	1.9	2.3	0.1	0.3	4.2	1.9
J-v-(1-6)	Total voluntary social contributions	9.3	3.1	11.5	11.3	3.7	3.2	4.0	3.5
J-r	Response:								
J-r-1	Tells experience	1.5	0.3	7.4	10.3	2.4	2.2	3.8	3.5
J-r-3	Suggestions	1.5	0.2	1.6	2.9	0.4	0.9	3.3	1.1
J-r-5	Holds up hand	2.3	0.6	2.2	6.3	1.3	3.0	4.8	0.6
J-r-(1-6)	Total social contributions in response	5.8	1.4	11.4	15.1	4.4	3.5	6.0	2.4
J-(v & r)	Total social contributions	15.2	4.4	22.9	22.6	8.1	4.9	5.7	3.4

*Data for 1938 taken from J. E. Brewer, Table 17 (9, chapter ii). Standard deviations of the means for the 1938 data are not reproduced.

† Indicates that the mean for the children in room 2D was higher in the comparison.

1. The data in this study were gathered in January and February of each year. It should be noted that the children had been with their respective teachers since the preceding September.

2. It is not known what might have been revealed by similar measures taken at the opening of school in the fall. Whether or not there were wide personality differences in the chance assortments of children in the two second-grade rooms in the fall, the data in this study represent measures of the active interplay of teachers and of children after being together for approximately five months.

3. In 1938 teacher 2D showed consistently more domination of the children, both in her group and in her individual contacts, than did teacher 2C. The differences between teachers were large and in all types of domination were significant or approached significance.

If there were antecedent difficulties in the personalities of the children against which teacher 2D had for five months been struggling, she was still using high frequencies of a technique which could be expected to intensify and not to reduce conflict and misunderstanding in her room. An equally logical inference could be that there were personality difficulties in teacher 2D of which the high frequencies of dominative contacts were a measure and against which the children were trying to protect themselves.

4. In 1938 teacher 2D had significantly lower mean frequencies of total integrative contacts. If the children had been expressing in their classroom behavior "maladjustments" at home or on the playground, then it can be said that teacher 2D was making very infrequent attempts to enlist the social participation of her children in some common purpose. She was not building upon expressed interests of the child, as was shown by very low frequencies of both group and individual IT contacts. If the high frequencies of conflict situations could be said to be "provoked" by the children, then teacher 2D was not cutting the vicious circle of dominative relationships by the use of integrative approaches to the child.

5. In 1938, in all J categories of social contribution, both voluntary and in response to the invitations of others, the children with teacher 2D were lower in mean frequencies than were the children with teacher 2C. In this respect they may be reflecting less favorable home environments or some other factors. But if so the high frequencies of teacher domination could be expected only to reduce further the spontaneity and the social participation of children already lacking in expression of initiative and of harmonious social interplay.

There is a justifiable inference that the behavior of the children was in considerable measure an expression of response to some kind of personality problems which the teacher brought into the school situation. It could be said that after five months there were relatively high frequencies of individual and group frustration, high frequencies of being told just what to do, and low frequencies of occasions on which the child was

encouraged by the teacher to expand his own ideas or to exercise his own judgment co-operatively with the teacher in working out decisions in the classroom.

6. In 1939, in spite of a considerable rapprochement of teachers 2C and 2D in a number of respects, it can be said either that teacher 2D was unfortunate in having had more maladjusted children assigned to her room in two consecutive years than teacher 2C (an improbable chance occurrence) or that she was directly obstructing social contributions in her children. To the extent that the children were more maladjusted to start with, it must be said that evidence is consistent only with the assumption that teacher 2D was intensifying that maladjustment and doing little to alleviate it.

VII. Comparison of Rooms 2C and 2D in Consecutive Years with the Same Teachers and Different Children

A. Comparison of rooms 2C in 1938 and 1939

1. Teacher's group contacts.—It was shown above that the coefficient of correlation of the rank order of categories of group contacts for 1938 and 1939 was 0.80 for teacher 2C. Notwithstanding this high similarity of relationship for the two years, teacher 2C was quite different the second year in her level of activity, as shown by mean frequencies per child for types of teacher contacts. The mean frequencies for both group and individual contacts for 1938 and 1939, together with the critical ratios of the differences between means, are given in Table 8.

Teacher 2C in 1939 had a mean frequency of DC contacts per child almost twice that in 1938. The difference was significant. She used more group contacts of a directive sort of domination in 1939; the critical ratio of the difference for DN-(1-8) contacts was 2.5.

Teacher 2C in 1939 had almost twice as many contacts per child in DN-(9-10), domination-lecture method; the difference again was reliable. In DT, domination in working together, the frequencies were small for both years and the slight decrease in 1939 represented an unreliable difference.

In integrative contacts there was a slight, though unreliable, increase in IN, which represents overtures on the part of the teacher to enlist the child's voluntary participation in some activity. The marked and statistically reliable decrease in IT, integration in working together, produced a corresponding and significant reduction in total integrative group contacts in 1939.

The reduction in total integrative contacts was more than offset by the increase in group domination, so that teacher 2C showed a significant increase in total contacts for 1939.

2. Teacher's individual contacts.—That the relative frequencies of the different types of individual contacts in 1938 and 1939 were quite similar for all the children as a group was seen in the rank order coefficient of

TABLE 8

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF TEACHER 2C WITH TWO DIFFERENT GROUPS OF SECOND-GRADE CHILDREN IN CONSECUTIVE YEARS
(Observation time: two hours per child.)

	Type of Teacher Contact	Teacher 2C38* N = 30		Teacher 2C39 N = 27		C.R.
		Mean	S.D.	Mean	S.D.	
		Group Contacts				
DC	Domination in conflict	4.4	2.8	8.2	4.7	3.7†
DN-(1-8)	Domination with no conflict—directive	72.3	17.8	83.4	15.4	2.5
DN-(9-10)	Domination with no conflict—lecture method	54.5	18.8	101.9	25.6	7.9†
DN	Domination with no conflict .	126.9	29.1	185.3	33.3	7.0†
DT	Domination in working together	1.6	2.2	1.4	1.3	0.5
	Total domination	132.9	31.7	194.9	34.2	7.1†
IN	Integration with no evidence of working together	64.0	11.9	67.6	20.5	0.8†
IT	Integration in working together	38.1	19.7	5.6	2.8	9.0
	Total integration	102.3	23.6	73.2	20.5	5.0
Total contacts		235.1	39.3	268.0	34.8	3.4†
		Individual Contacts				
DC	Domination in conflict	1.1	1.4	2.8	2.9	2.8†
DN-(1-8)	Domination with no conflict—directive	4.2	2.9	6.3	4.3	2.2†
DN-(9-10)	Domination with no conflict—lecture method	2.9	2.3	10.1	7.9	4.5†
DN	Domination with no conflict .	7.2	4.6	16.4	11.5	3.9†
DT	Domination in working together	1.9	1.6	3.2	2.4	2.2†
	Total domination	10.2	5.8	22.3	12.8	4.5†
IN	Integration with no evidence of working together	2.6	2.2	4.7	5.5	1.9†
IT	Integration in working together	11.6	8.9	8.7	8.1	1.3
	Total integration	14.4	9.9	13.5	12.5	0.3
Total contacts		24.6	13.6	35.8	21.7	2.3†

*Data for 1938 taken from J. E. Brewer, Tables 15 and 16 (9, chapter ii).

†Indicates that the mean per child for 1939 was larger.

0.86 in Table 5. There were, nevertheless, changes in the level of activity of the teacher with the children in 1939.

Though the frequencies of conflict situations in which teacher 2C dominated an individual child were relatively small, there was an increase in 1939 that was virtually significant. Her individual directive contacts of a dominating sort also became more frequent, the difference approaching statistical reliability. Her use of individual lecture method contacts more than trebled in 1939, the critical ratio of the difference being 4.5.

Though the mean frequencies in DT, domination in working together, were small in both years, the increase in such individual contacts in 1939 produced a difference that approached significance.

Total domination more than doubled; the critical ratio was 4.5.

The two types of integrative contacts showed the same respective directions of change as was found in group integrative contacts. Whereas, in group integrative contacts, the decrease in 1939 represented a significant difference, in individual integrative contacts the almost significant increase for IN was offset by an almost equal and almost significant decrease for IT. The mean frequencies for total integrative contacts for the two years were virtually the same.

Because of the large differences in individual dominative contacts, the mean frequencies for total individual contacts in 1939 represented a virtually significant increase over 1938.

3. Child behavior.—It was implied in the discussion of Tables 6 and 7 that teacher 2C in 1938, by comparison with teacher 2D, either was a "good" teacher or was fortunate in having in her room a group of alert, spontaneous, and socially harmonious children. Even with the changes in her behavior noted in 1939, she was in general less dominating and significantly more integrative than teacher 2D. The changes in teacher 2C in 1939 were, from a pedagogical standpoint, changes in an adverse direction. Without imputation as to cause or effect the mean frequencies of child behavior can now be examined.

Table 9 shows for 1938 and 1939 the mean frequencies for the child-behavior categories for the two groups of different second-grade children with the same teacher, together with the critical ratios of the differences. At first glance the comparative differences between the two groups of children appear to offer less consistency than might be expected from the differences in the teacher's behavior. Certain blocks of categories seem, however, to indicate general trends of differences. The children in 1939 showed more nervous habits, more looking up at seat work, more undetermined communications from child to child, and more conforming behavior. The frequencies, as well as the differences, were large, and the critical ratios all revealed significant differences. Though the frequencies of playing with foreign objects in school were small, the increase in 1939 was virtually reliable.

TABLE 9

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF TWO DIFFERENT GROUPS OF SECOND-GRADE CHILDREN WITH TEACHER 2C IN CONSECUTIVE YEARS
(Observation time: two hours per child.)

Child-Behavior Categories		Room 2C38* N=30		Room 2C39 N=27		C.R.
		Mean	S.D.	Mean	S.D.	
N.H.	Nervous habits	50.5	17.3	96.0	20.0	9.2†
L.Up	Looking up	20.1	9.0	31.2	10.7	4.2†
L.Seat	Leaves seat	5.9	3.7	5.7	3.5	0.0
Undet.	Undetermined child—child contacts	33.4	13.7	55.9	27.1	3.9†
F.O.	Foreign objects	0.5	0.8	1.4	2.1	2.0†
P	Conforming	26.5	7.9	36.4	10.5	4.0†
N-1	Commands other child	1.3	2.0	1.4	0.2	0.2†
N-2	Attacks status of other child	0.2	0.7	0.3	0.6	0.1†
N-(1-2)	Dominates other children	1.5	1.9	1.6	2.1	0.2†
M	Nonconforming	1.8	2.0	0.9	1.2	2.0
L-1	Answers spontaneously	2.5	2.7	6.6	6.8	3.4†
L-2	Holds up hand	6.6	5.3	10.7	9.4	2.7†
L-3	Answers when called	4.9	4.6	7.6	4.8	2.1†
L-4	Fails to answer	0.2	0.5	0.3	0.7	0.2
L-(1-4)	Response in recitation	14.3	9.4	25.2	17.3	2.9†
K-1	Seeks help	2.6	2.4	5.1	5.6	2.1†
K-3	Contributes to own problem	2.8	1.5	0.2	0.8	3.7
K-4	Contributes to other's problems	11.6	10.2	3.0	3.9	4.1
K-(3-4)	Contributes to own and other's problems	14.3	11.3	3.7	3.9	4.9
K-(1-4)	Problem solving	17.0	11.9	8.8	7.1	3.2
J-v	Voluntary:					
J-v-1	Tells experience	2.7	3.7	4.2	5.5	1.3†
J-v-3	Suggestions	2.1	2.1	3.3	5.6	1.2†
J-v-5	Holds up hand	3.2	3.2	1.7	2.8	1.5
J-v-6	Appreciation	0.9	1.0	1.9	2.3	1.9†
J-v-(1-6)	Total voluntary social contributions	9.3	7.6	11.5	11.3	0.8†
J-r	Response:					
J-r-1	Tells experience	1.5	1.6	7.4	10.3	4.8†
J-r-3	Suggestions	1.5	2.1	1.6	2.9	0.1†
J-r-5	Holds up hand	2.3	1.9	2.2	6.3	0.2
J-r-(1-6)	Total social contributions in response	5.8	3.8	11.4	15.1	1.9†
J-(v & r)	Total social contributions	15.2	9.1	22.9	22.6	1.7†

*Data for 1938 taken from J. E. Brewer, Table 17 (9, chapter ii).
† Indicates that the mean for the children in 1939 was larger.

In the categories K-3 and K-4 the children in 1939 showed large and significant decreases. This means that the children made fewer contributions to the solving of their own or a companion's problems. Teacher 2C remarked about the children on one occasion that the 1939 group spent less time and energy solving their own problems and more time trying to get some one else to do the problems for them. The teacher thought that because of this behavior she more frequently than the year before told the children to do things. The teacher's judgment is supported by the higher frequencies of K-1, seeks help, by the children in 1939 and by the greatly increased frequencies of undetermined child-child contacts, which include all forms of whispering.

In the J-v categories of voluntary social contributions most of the comparisons reveal increases in 1939. However, the children showed an almost significant decrease in J-v-5, holds up hand. It should be noted, however, that the standard deviation was much greater than the mean; indicating that there were wide individual variations among the children in this category of behavior. The other J-v categories showed increases in 1939 that leave the net mean frequencies for 1938 and 1939 with an unreliable difference.

There was a significant increase in J-r-1, tells experience in response to some one's question or invitation.

The children in 1939 also showed more spontaneity, as measured in higher frequencies of L-1, answers spontaneously in recitation.

Because the J-v and J-r categories showed increases in mean frequencies that on the surface would appear to be inconsistent with the higher frequencies of dominative contacts, it is helpful here to anticipate a few intercorrelations. For teacher 2C the following coefficients of correlation were obtained from the 1939 data:

		J-v-(1-6)	J-r-(1-6)
DC	Domination in conflict	0.43	0.29
DN-(1-8)	Domination—directive	0.36	-0.18
DN-(9-10)	Domination—lecture method	0.35	-0.03
DT	Domination in working together	0.56	-0.10
IN	Integration with no evidence of working together	0.76	0.61
IT	Integration in working together	0.82	0.71

From these coefficients it can be seen that the frequencies in spontaneity in 1939 had a high positive relationship with this teacher's integrative contacts.

It can be said further that each of the types of teacher contacts had only low and unreliable coefficients of correlation with P, conforming and M, nonconforming. Teacher 2C39 had a coefficient of correlation of 0.55 between DC and IT contacts. This coefficient indicates a tendency on the part of teacher 2C39 to show integrative behavior in working with those children with whom she also used domination in a conflict situation.

From a mental hygiene standpoint this tendency may be regarded as a positive characteristic. That it was a characteristic of teacher 2C and not a characteristic of teacher 2D was shown by an unreliable coefficient of 0.24 in the correlation of the DC and IT contacts of teacher 2D for 1939. The DC and IN contacts of teacher 2D39 showed a coefficient of 0.07.

B. Comparison of rooms 2D in 1938 and 1939

1. Teacher's group contacts.—The coefficient of correlation for rank order of categories of teacher contacts for teacher 2D in 1938 and 1939 was 0.84. This coefficient indicates that in those categories in which teacher 2D was high in one year she tended to be high in the other year.

It was noted that in 1939 teachers 2C and 2D showed an approach in mean frequencies which in the preceding year had revealed rather striking contrasts.

Table 10 gives the mean frequencies of both group and individual contacts for 1938 and 1939 for teacher 2D, together with the respective critical ratios of the differences for the comparison between the two years. Teacher 2D showed a significant increase in group domination in conflict situations. She also showed an increase in group domination-lecture method contacts; there were 85 chances in 100 that the obtained difference represented a true difference greater than zero.

In all other types of group contacts there was a decrease, the differences being significant or approaching significance. Of special note are the large and significant decreases in both types of group integrative contacts. Thus, notwithstanding an actual decrease of both dominative and integrative group contacts, it was the large decrease in total integrative contacts that made the I-D ratio for group contacts drop from 0.19 in 1938 to 0.12 in 1939.

2. Teacher's individual contacts. In contrast with her increase in group dominative DC contacts, teacher 2D showed a virtually significant decrease in individual domination in conflict. Her domination-directive contacts showed no significant change in 1939. Her domination-lecture method showed an increase that approached significance, and the increase in individual contacts, DT, domination in working together, represented a significant change. In individual integrative contacts the almost significant decrease in IN contacts was offset by a corresponding increase in IT, leaving the net totals for individual integrative contacts virtually the same for both years. With no reliable changes in individual domination or in individual integration, the I-D ratios remained the same, 0.22. With each of the two groups of children teacher 2D had about four and one-half times as many individually dominative contacts per child as integrative contacts.

3. Child behavior.—Table 11 shows for the two groups of children successively with teacher 2D in 1938 and 1939 the mean frequencies of child behavior, together with the critical ratios of the differences between the respective mean frequencies for the two years.

TABLE 10

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF TEACHER 2D WITH TWO DIFFERENT GROUPS OF SECOND-GRADE CHILDREN IN CONSECUTIVE YEARS
(Observation time: two hours per child.)

Type of Teacher Contact		Teacher 2D38* N = 29		Teacher 2D39 N = 28		C.R.
		Mean	S.D.	Mean	S.D.	
		Group Contacts				
DC	Domination in conflict	7.9	4.4	12.0	5.5	3.2†
DN-(1-8)	Domination with no conflict—directive	115.1	26.9	86.3	23.1	4.3
DN-(9-10)	Domination with no conflict—lecture method	93.7	31.9	102.0	27.6	1.1†
DN	Domination with no conflict .	208.8	49.7	188.3	39.9	1.7
DT	Domination in working together	3.0	2.0	1.6	1.5	3.0
	Total domination	219.7	21.8	201.9	40.0	1.5
IN	Integration with no evidence of working together	38.8	11.7	23.7	10.4	5.2
IT	Integration in working together	2.2	2.0	0.7	0.9	3.7
	Total integration	41.1	11.7	24.4	10.5	5.7
Total contacts		260.7	53.7	226.3	41.9	2.7
		Individual Contacts				
DC	Domination in conflict	7.9	6.9	4.6	3.3	2.3
DN-(1-8)	Domination with no conflict—directive	7.4	3.6	6.6	4.8	0.7
DN-(9-10)	Domination with no conflict—lecture method	6.2	5.1	9.8	9.6	1.7†
DN	Domination with no conflict .	13.6	6.6	16.4	13.7	1.0†
DT	Domination in working together	3.7	2.4	7.8	5.2	3.8†
	Total domination	25.2	12.6	28.8	19.1	0.8†
IN	Integration with no evidence of working together	2.3	2.7	1.6	1.4	1.3
IT	Integration in working together	3.3	2.6	4.7	4.5	1.4†
	Total integration	5.7	4.0	6.3	4.8	0.5†
Total contacts		30.8	14.8	35.1	22.5	0.8†

*Data for 1938 taken from J. E. Brewer, Tables 15 and 16 (9, chapter ii).

† Indicates that the mean per child for 1939 was larger.

TABLE 11

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF TWO DIFFERENT GROUPS OF SECOND-GRADE CHILDREN WITH TEACHER 2D IN CONSECUTIVE YEARS
(Observation time: two hours per child.)

Child-Behavior Categories		Room 2D38* N=29		Room 2D39 N=28		C.R.
		Mean	S.D.	Mean	S.D.	
N.H.	Nervous habits	44.1	17.6	89.1	30.3	6.8†
L.Up	Looking up	34.8	10.1	54.1	20.5	4.5†
L.Seat	Leaves seat	6.0	3.8	5.1	2.6	1.0
Undet.	Undetermined child—child contacts	63.4	31.3	94.9	33.6	3.7†
F.O.	Foreign objects	1.7	2.1	2.2	2.7	0.7†
P	Conforming	44.7	16.6	34.4	14.7	2.5
N-1	Commands other child	1.6	2.0	3.0	4.1	1.5†
N-2	Attacks status of other child	0.0	0.2	0.4	0.7	0.6†
N-(1-2)	Dominates other children	1.6	2.0	3.4	4.1	2.1†
M	Nonconforming	8.4	8.1	2.1	2.0	4.2
L-1	Answers spontaneously	1.1	1.5	1.5	1.8	0.5†
L-2	Holds up hand	11.7	9.8	23.5	12.7	5.4†
L-3	Answers when called	5.2	4.0	13.2	9.8	5.8†
L-4	Fails to answer	0.4	0.8	0.6	1.3	0.4†
L-(1-4)	Response in recitation	18.3	12.7	38.9	21.8	4.3†
K-1	Seeks help	3.1	2.8	4.3	4.4	1.3†
K-3	Contributes to own problem	1.7	1.5	0.6	1.1	1.6
K-4	Contributes to other's problems	7.1	6.3	4.3	4.0	1.9
K-(3-4)	Contributes to own and other's problems	8.8	6.3	4.8	4.2	2.8
K-(1-4)	Problem solving	11.9	7.8	9.1	6.9	1.4
J-v	Voluntary:					
J-v-1	Tells experience	1.2	3.9	2.3	4.1	0.9†
J-v-3	Suggestions	0.3	0.7	0.8	3.3	0.6†
J-v-5	Holds up hand	1.0	1.2	0.4	7.2	0.9
J-v-6	Appreciation	0.1	0.3	0.1	0.3	0.0†
J-v-(1-6)	Total voluntary social contributions	3.1	4.1	3.7	3.2	0.6†
J-r	Response:					
J-r-1	Tells experience	0.3	0.7	2.4	2.2	2.6†
J-r-3	Suggestions	0.2	0.5	0.4	0.9	0.4†
J-r-5	Holds up hand	0.6	0.7	1.3	3.0	0.9†
J-r-(1-6)	Total social contributions in response	1.4	1.3	4.4	3.5	4.3†
J-(v & r)	Total social contributions	4.4	4.5	8.1	4.9	2.9†

*Data for 1938 taken from J. E. Brewer, Table 17 (9, chapter ii).
†Indicates that the mean for the children in 1939 was larger.

There were no significant differences in the two groups of children for the categories of leaves seat, plays with foreign objects, attacks status of other child, answers spontaneously in recitation, fails to answer in recitation, or in any of the J-v categories of voluntary social contribution.

The children in 1939 showed significantly higher frequencies of nervous habits, looking up at seat work, undetermined child-child contacts, total responses in recitation, and in the total J-r categories of social contributions in response to questions or invitations from others. The children in 1939 showed increases that represented differences that approximated significance in commands other child, dominates other children, seeks help, and tells experience in response to others.

They were significantly lower in nonconforming and showed a decrease approximating significance in conforming. Decreases in 1939 that approached significance were shown also in the problem solving categories, K-3 and K-4.

It has been pointed out that from 1938 to 1939 the I-D ratios of teacher 2D changed from 0.19 to 0.12 for group contacts and remained at 0.22 for individual contacts.

VIII. Comparison of the Contacts of Second- and Third-Grade Teachers Who Had Groups of the Same Children Consecutively Enrolled; and Comparison of the Behavior of the Same Groups of Children in the Two Consecutive Grades

The children who were in Room 2C in the second grade moved to Room 3C in the third grade. Correspondingly, the children who were in Room 2D in the second grade moved to Room 3D in the third grade. The comparisons of the second- and third-grade teachers who consecutively had charge of these two groups of children are based on data for those children only who were present in the study for both years.

Data for 1938 have been selected from the original data gathered by Brewer. New means and standard deviations have been computed and, because the comparisons involve the same children, coefficients of correlation have been computed for each type of teacher contact and for each category of child behavior.

A. Comparison of Rooms 2C38c and 3C39c

Table 12 shows the coefficients of correlation between the contacts of teachers 2C and 3C with the same children, respectively, in 1938 and 1939. This table also presents the means and critical ratios of the differences for both group and individual contacts. As has been stated, a group contact is a teacher's contact with two or more children.

1. Teachers' group contacts.—It is to be noted in Table 12 that of the ten coefficients for group contacts all are virtually zero; not one even

TABLE 12

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF SECOND- AND THIRD-GRADE TEACHERS WITH THE SAME CHILDREN IN CONSECUTIVE YEARS
(Observation time: two hours per child. N=22)

	Type of Teacher Contact	r*	Teacher 2C38c		Teacher 3C39c		C.R.
			Mean	S.D.	Mean	S.D.	
		Group Contacts					
DC	Domination in conflict	-0.12	4.0	2.6	8.6	3.9	4.4†
DN-(1-8)	Domination with no conflict—directive	-0.31	73.2	20.0	101.5	27.5	3.8†
DN-(9-10)	Domination with no conflict—lecture method	0.16	54.0	19.4	82.7	31.7	3.9†
DN	Domination with no conflict	-0.09	127.2	30.8	184.2	44.1	4.8†
DT	Domination in working together	0.12	1.9	2.5	1.0	1.2	1.5
	Total domination	-0.06	133.1	33.2	193.7	47.7	4.8†
IN	Integration with no evidence of working together	0.01	65.6	13.8	54.6	11.7	2.9
IT	Integration in working together	-0.12	40.3	20.4	1.1	1.6	8.9
	Total integration	0.01	106.1	26.2	55.6	11.6	8.3
Total contacts		-0.03	239.1	43.5	249.4	49.5	0.7†
		Individual Contacts					
DC	Domination in conflict	0.32	1.3	1.6	1.6	2.5	0.5†
DN-(1-8)	Domination with no conflict—directive	-0.20	4.3	3.1	2.9	2.8	1.5
DN-(9-10)	Domination with no conflict—lecture method	-0.07	2.9	2.6	2.7	3.4	0.3
DN	Domination with no conflict	-0.12	7.2	4.9	5.6	4.2	1.1
DT	Domination in working together	-0.15	2.2	1.7	1.6	1.7	1.0
	Total domination	-0.09	10.7	6.2	8.8	5.9	1.3
IN	Integration with no evidence of working together	-0.05	2.6	2.3	3.3	2.9	0.8†
IT	Integration in working together	0.16	11.3	8.2	11.4	9.1	0.0†
	Total integration	0.24	14.2	9.7	14.6	9.5	0.2†
Total contacts		0.13	24.9	13.7	23.4	13.4	0.4

*Since the contacts of teachers 2C38c and 3C39c are with the same children, the frequencies of teacher contacts for the two teachers represent correlated measures. A coefficient must be 0.47 to be four times its probable error.

approximates being four times its probable error. These coefficients may indicate that group contacts were of such a nature that no particular children were singled out by both teachers for greater attention nor were any children systematically neglected by both. The zero relations between teachers' group contacts of all kinds mean that, as far as group contacts were concerned, there were no children who tended to be high or low in receiving any type of group contacts from both second- and third-grade teachers. That in each grade there were some children who received more contacts than others and that there was a considerable range of individual differences among children are shown by the relatively large standard deviations of the distributions.

The I-D ratios for group contacts, given in Table 4, show that in both grades the teachers used more dominative than integrative contacts. For every 100 group dominative contacts these children received in the second grade, they received eighty group integrative contacts. In the third grade, however, they received only twenty-nine group integrative contacts for every 100 group dominative contacts. The comparison of the means in Table 12 reveals a general tendency for the third-grade teacher to use significantly more group domination and significantly less group integration than the children received in the second grade.

The two teachers used about the same numbers of total group contacts, the small obtained difference being statistically unreliable. In group contacts the teachers were similar as to total frequencies: in the second grade the teacher used group contacts more frequently to work co-operatively with the children; in the third grade the teacher used the occasions of group contacts more frequently to frustrate and obstruct the children in something they were doing, to tell them specifically to do or not to do something, to tell them how to do it, or to make some kind of decision for the children.

2. Teachers' individual contacts.—As has been noted for group contacts, the coefficients of correlation for individual contacts all represented zero or low and unreliable relationships between teachers 2C38c and 3C39c. The zero relations shown in both group and individual contacts indicate that for neither kind of contact were there either "bad eggs" or "teacher's pets" who remained in the same classification for both teachers. Among the children in each room there were individual differences in frequencies of the several types of individual domination and integration, as shown by the relatively large standard deviations. But if a child tended to receive, for example, high frequencies of individual domination in conflict situations in the second grade, there was no systematic tendency for this relatively high frequency to be repeated by the third-grade teacher.

In the comparison of mean frequencies of individual contacts the contrasts between teachers 2C38c and 3C39c noted in group contacts were not present. In their mean frequencies of individual contacts the teachers were very similar. Not one critical ratio was over 1.5. The highest

critical ratio was found for a reduction of directive individual domination DN-(1-8), in the third grade. It was shown in Table 4 that the I-D ratios for individual contacts were very similar for teachers 2C38c and 3C39c, the ratios being, respectively, 1.33 and 1.67.

3. Child behavior.—Table 13 shows for child-behavior categories the coefficients of correlation, the mean frequencies, and critical ratios of the differences between the means for the same children in the second and third grades.

The coefficients of correlation must be 0.47 to be four times their respective probable errors. Among the thirty coefficients the highest is 0.56 for a combination of four categories, L-(1-4), response in recitation, and only three other coefficients are over 0.40. It cannot be said that these measures represent any great tendencies for behavior patterns in individual children to persist through the second and third grades. There was a positive tendency for those most active in responding in recitation in the second grade to be most active in similar responding in the third grade. There was also a reliable tendency for those children most active in the second grade in the total J-(v & r) categories of social contributions (both voluntary and in response to others) to be again more active in such behavior in the third grade. The coefficient of correlation for the combined J categories was 0.51. There were no other significant tendencies among these children, as revealed in the coefficients of correlation.

Among the group as a whole there were some categories which showed significant increases in frequency for this group of children in the third grade. Such categories were nervous habits, which had both the highest frequency and the highest increase of all the categories, with a critical ratio of 18; looking up at seat work; leaves seat; undetermined child—child contacts; and playing with foreign objects. All of these categories include behavior which does not necessarily involve the teacher directly.

Statistically significant increases in behavior which did involve the teacher were shown in conforming and seeks help. In J-r-1, tells experience in response to others, the increase approached statistical significance.

On the other hand, significant decreases in the third grade occurred in L-1, answers spontaneously; in the total for L-(1-4), response in recitation; in the combined categories, K-(3-4), contributes to own and to other's problems; and in J-v-6, voluntary appreciation.

Decreases approaching reliability were found in N, dominates other children; L-3, answers when called; and in the combined J categories of total social contributions.

4. Recapitulation and interpretation. By way of recapitulation and interpretation the following statements may be made:

a) The children from room 2C38c found in the third grade a great deal more group domination and a great deal less group integrative behavior, with most of the differences between mean frequencies per child significant. The relative changes in group contacts

were reflected in the I-D ratios in a drop of from 0.80 in the second grade to 0.29 in the third grade.

b) With the exception of dominative-directive contacts, the children found no appreciable differences between second- and third-grade teachers in mean frequencies per child of individual contacts. None of the critical ratios was over 1.5.

c) From a pedagogical or mental hygiene point of view, the net change in teachers when the children were promoted from the second to the third grade must be regarded as adverse.

d) When the third-grade teacher's contacts in 1939 were correlated with the second-grade teacher's contacts with the same children in 1938, the coefficients were without exception found to be low and unreliable. This was true both for group contacts and for contacts with individual children. These low correlations offer no support for an assumption that in certain children there were persistent behavior patterns or personality characteristics to which the third-grade teacher was obliged to respond in a fashion similar to that of the second-grade teacher.

e) With the exception of three reliable coefficients among thirty coefficients of correlation for children's behavior categories, the low and unreliable coefficients show in the individual children the existence of no behavior patterns or personality characteristics that persisted from the second grade into the third grade. These coefficients offer direct support to the assumption that, within the behavior measured by these twenty-nine categories, children have a high degree of flexibility in meeting their environments. Taken with the other evidence, which shows a relation between child behavior and the simultaneously recorded teacher contacts, these coefficients mean that children are responsive to the personality patterns in teachers which are recorded by this method. The disagreeable or undesirable characteristics of child behavior, such as playing with foreign objects, nonconforming, conforming, commanding other children, or attacking the status of other children, showed little carry-over in the children. What did persist from one year to the next was found in the highly desirable qualities of child behavior: total social contributions to others (0.51) and total responses in recitation (0.56). Even so, these qualities are in part a response to the personality patterns of individual teachers.

f) From a mental hygiene or pedagogical standpoint, the general changes in children's behavior from the second grade to the third, as shown by mean frequencies, particularly in the decreases in problem solving and in total social contributions, must be regarded as adverse.

B. Comparison of rooms 2D38c and 3D39c

Table 14 shows the coefficients of correlation between contacts of teachers 2D and 3D with the same children in 1938 and 1939. This table

TABLE 13

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF THE SAME CHILDREN IN THE SECOND AND THE THIRD GRADES IN CONSECUTIVE YEARS
(Observation time: two hours per child. N=22).

Child-Behavior Categories		r*	Room 2C38c		Room 3C39c		C.R.
			Mean	S.D.	Mean	S.D.	
N.H.	Nervous habits	0.38	50.9	17.1	118.3	14.1	18.0†
L.Up	Looking up	0.12	20.2	9.1	35.3	11.5	5.2†
L.Seat	Leaves seat	.0.33	4.8	2.8	9.3	4.7	4.5†
Undet.	Undetermined child—child contacts	0.12	31.1	18.1	90.2	48.4	5.6†
F.O.	Foreign objects	-0.00	0.6	0.8	2.4	1.7	4.6†
P	Conforming	0.24	26.1	8.5	37.7	14.4	3.7†
N-1	Commands other child	0.27	1.5	2.2	0.9	1.2	1.1
N-2	Attacks status of other child	-0.04	0.2	1.4	0.1	0.3	0.3
N-(1-2)	Dominates other children	0.22	1.6	2.4	1.0	1.5	1.2
M	Nonconforming	0.05	1.9	2.0	2.3	2.3	0.7†
L-1	Answers spontaneously	0.18	2.7	3.1	0.4	0.8	3.6
L-2	Holds up hand	0.50	6.3	5.2	5.2	3.3	1.1
L-3	Answers when called	0.20	4.5	4.4	2.5	3.4	2.1
L-4	Fails to answer	-0.16	0.1	0.3	0.1	0.3	0.0
L-(1-4)	Response in recitation	0.56	13.6	8.6	8.1	4.7	3.6

K-1	Seeks help	0.34	2.5	2.0	6.7	5.6	3.8†
K-3	Contributes to own problem	-0.20	2.7	2.4	1.0	1.9	2.5
K-4	Contributes to other's problem	0.14	12.5	16.0	3.4	3.0	2.7
K-(3-4)	Contributes to own and other's problems	0.13	15.2	11.7	4.3	3.9	4.3
K-(1-4)	Problem solving	0.31	17.6	12.7	11.0	8.8	2.4
J-v	Voluntary:						
J-v-1	Tells experience	0.44	3.0	4.2	3.9	4.8	0.9†
J-v-3	Suggestions	0.07	1.9	1.8	1.6	3.5	0.4
J-v-5	Holds up hand	-0.08	3.6	3.5	1.2	1.8	2.8
J-v-6	Appreciation	-0.20	1.0	1.1	0.1	0.2	3.9
J-v-(1-6)	Total voluntary social contributions	0.32	9.9	8.1	6.9	8.2	1.5
J-r	Response:						
J-r-1	Tells experience	-0.18	1.6	1.6	3.1	3.8	1.6†
J-r-3	Suggestions	0.02	1.5	2.6	0.1	0.5	2.5
J-r-5	Holds up hand	-0.06	2.4	3.8	1.9	3.4	0.4
J-r-(1-6)	Total social contributions in response	-0.08	5.9	4.2	5.2	4.4	0.5
J-(v & r)	Total social contributions	0.51	15.8	9.2	12.1	9.0	1.9

*Since the children in rooms 2C38c and 3C39c are the same, the mean frequencies of child behavior in the two rooms represent correlated measures. The coefficient must be 0.47 to be four times its probable error.

†Indicates that the mean for third grade was larger.

TABLE 14

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF SECOND- AND THIRD-GRADE TEACHERS WITH THE SAME CHILDREN IN CONSECUTIVE YEARS

(Observation time: two hours per child. N=27)

	Type of Teacher Contact	r*	Teacher 2D38c		Teacher 3D39c		C.R.
			Mean	S.D.	Mean	S.D.	
		Group Contacts					
DC	Domination in conflict	0.26	8.0	4.5	25.4	8.1	11.0†
DN-(1-8)	Domination with no conflict—directive	0.14	115.0	27.5	97.9	21.7	2.7
DN-(9-10)	Domination with no conflict—lecture method	-0.20	89.6	28.5	93.8	29.0	0.5
DN	Domination with no conflict	-0.09	204.6	48.1	191.7	42.1	1.0
DT	Domination in working together	0.11	3.1	2.1	5.4	2.5	4.0†
	Total domination	0.21	215.7	48.5	222.4	43.7	0.6
IN	Integration with no evidence of working together	-0.14	38.7	11.7	82.9	26.3	7.6†
IT	Integration in working together	-0.13	2.3	2.0	3.7	2.4	2.3†
	Total integration	-0.13	40.9	11.5	86.7	26.9	7.8†
Total contacts		-0.09	256.7	52.3	309.1	37.1	7.2†
		Individual Contacts					
DC	Domination in conflict	0.21	8.0	7.0	4.7	5.0	2.0
DN-(1-8)	Domination with no conflict—directive	-0.08	7.4	3.7	4.7	3.7	2.7
DN-(9-10)	Domination with no conflict—lecture method	0.49	6.0	5.3	5.8	5.0	0.2
DN	Domination with no conflict	0.38	13.5	6.8	10.5	7.8	1.9
DT	Domination in working together	0.19	3.6	3.6	2.4	1.9	1.6
	Total domination	0.57	25.0	13.0	17.6	11.0	3.4
IN	Integration with no evidence of working together	0.23	2.3	2.8	5.8	4.7	3.8†
IT	Integration in working together	0.08	3.3	2.6	2.4	2.2	1.5
	Total integration	0.25	5.6	3.9	8.3	5.7	2.3†
Total contacts		0.52	30.6	15.1	25.9	13.9	1.8

*Since the contacts of teachers 2D38c and 3D39c are with the same children, the frequencies of teacher contacts for the two teachers represent correlated measures. A coefficient must be 0.44 to be four times its probable error.

also presents the means and critical ratios of the differences for both group and individual contacts.

1. Teachers' group contacts.—It can be seen that among the coefficients of correlation for group contacts all were low and none approached statistical reliability. The zero relations shown in the coefficients indicate no consistency between these two teachers in the second and third grades in their use of group contacts among the children. These data are based on fifty-four hours of observation of each teacher.

A comparison of the mean frequencies of group contacts shows wide differences that represent both increases and decreases in the group dominative contacts encountered by the children in the second grade and in the third grade.

In the third grade the mean frequencies per child of conflict situations in which the teacher frustrated a group of children were three times as large. The critical ratio was 11. There were also in the third grade significantly higher mean frequencies of DT, domination in working together.

There was, however, a decrease in DN-(1-8), domination with no evidence of conflict-directive contacts, the difference being virtually significant. There was no change in DN-(9-10), domination-lecture method.

The net result of these differences among the types of group domination was virtual identity of mean frequencies of total group domination contacts by the two teachers.

In group integrative contacts the differences represented changes in only one direction. There were in the third grade large increases in total group integration, with a critical ratio of 7.2.

From a mental hygiene standpoint, the changes in group contacts from the second to the third grade are inconsistent. The teacher in the third grade was much more active in total group contacts. A mental hygiene advantage of the third grade is shown in a significant doubling of the mean frequencies in group integrative contacts. The significant increase in group integrative contacts is reflected in the change in I-D ratios for group contacts. In the second grade the children had over five times as much group domination as group integration, the I-D ratio being only 0.19. In the third grade, with teacher 3D39c, the children received only two and one-half times as much group domination as integration; the I-D ratio was 0.39. The mental hygiene advantage, however, must be regarded as considerably offset by a trebling of the mean frequencies of group DC contacts.

2. Teachers' individual contacts.—Among the coefficients of correlation between teachers 2D38c and 3D39c in their use of individual contacts there were three coefficients greater than four times their respective probable errors. There was a positive and reliable tendency for a child who in the second grade received high frequencies of individual contacts, DN-(9-10), domination with no evidence of conflict-lecture method, to receive high frequencies of the same individual contacts from the third-grade teacher.

There was also a reliable tendency, shown in the coefficient of 0.57, for the child who had high frequencies of total individual dominative contacts in the second grade to receive high frequencies in the third grade. The coefficient means also that those children who were less frequently dominated as individual children in the second grade were less frequently dominated in the third. The same tendencies were shown for total individual contacts of all kinds in the coefficient of 0.52.

There was no such tendency indicated in DC, domination in conflict, nor in DN-(1-8), domination-directive, nor in DT, domination in working together. The fact that the coefficients for both types and for the total of individual integrative contacts were all unreliable would indicate that there was no tendency for high frequencies of individual integrative contacts to persist with the same children into the third grade. It has already been pointed out, however, that the mean frequencies of individual integrative contacts per child for teacher 2D were relatively low.

The comparison of mean frequencies reveals that when the children left the second grade they encountered in teacher 3D39c a consistent decrease in all types of individual domination, the differences being significant for total individual domination and approaching reliability for all other types except lecture method, which showed an unreliable decrease.

The children also encountered in the third grade significantly higher frequencies of IN contacts. This increase was somewhat offset by a decrease in IT contacts which approached significance, but left a net increase in total integrative contacts that was virtually significant.

From the standpoint of mental hygiene, the significant reduction in total individual domination and the virtually significant increase in total individual integration would seem to have offered in the third grade a superior environment.

3. Child behavior.—Since the children in the two rooms are the same, the mean frequencies of child behavior in the two rooms represent correlated measures. Table 15 shows for categories of child behavior the coefficients of correlation, the mean frequencies, and the critical ratios of the differences between mean frequencies for the same children in the second and third grades.

When N=27, a coefficient of correlation must be 0.44 to be four times its probable error. Among the thirty coefficients only three are thus reliable. The coefficient of 0.46 indicates a positive and reliable tendency for those children who were highest in undetermined child—child contacts in the second grade to be high in the same kind of behavior in the third grade. Similarly, the coefficient of 0.65 indicates a reliable tendency for those children who more frequently failed to answer in the second grade to be high in failing to answer in recitation in the third grade. However, the very low means for both grades, and for both grades the standard deviations over twice as high as the means, would indicate that the coefficient represents a high frequency in failing to answer in recitation for only a very few children. The coefficient of 0.48 for J-v-3, suggestions,

shows a tendency for a child who was high in this form of voluntary social contribution in the second grade to be high again in the third grade.

In no other categories or combinations of categories of children's behavior were there tendencies toward consistency in child behavior in both the second and the third grade.

When the children were observed in the third grade they showed significant increases in mean frequencies of nervous habits; in answers when called in recitation; in J-r-1, tells experience in response to question or invitation from another (an increase from an almost negligible mean frequency in the second grade); in J-r-(1-6), total social contributions in response to others; and in the combined J categories of total social contributions, both voluntary and in response to others.

In the third grade the children showed increases that approached significance in playing with foreign objects; in J-v-3, voluntary suggestions; in J-v-(1-6), total voluntary social contributions; in J-r-3, suggestions in response to others; and in J-r-5, holds up hand in response to question or invitation of another.

Significant decreases in the third grade appeared in nonconforming, and in the problem solving K-3 and K-4 categories, contributes to own and to other's problems. Decreases approaching reliability occurred in leaves seat; undetermined child-child contacts; conforming, L-(1-4), response in recitation, this latter group of categories having a standard deviation for the third grade almost double the mean.

4. Recapitulation and interpretation.

a) When the second-grade children in Room 2D were promoted to the third grade they found the teachers quite different. They found about the same mean frequencies of total group domination in both teachers, but the patterns of domination were different. The third-grade teacher used group domination in conflict situations three times as frequently as did the second-grade teacher, the difference being statistically reliable. But in the third grade the teacher used lower frequencies of group domination—directive contacts, with no evidence of conflict, the difference approaching statistical reliability. Notwithstanding her higher frequencies of conflict with groups of children, the third-grade teacher showed mean frequencies of working with groups of children integratively almost twice those of the second-grade teacher, this difference also being statistically reliable.

b) The large and significant decrease in individual domination in the third grade would justify the interpretation that teacher 3D39c was less frequently making the individual child conspicuous, especially in conflict situations. There were only about half as many frequencies of individual domination in conflict in the third grade.

c) Teacher 3D39c used higher frequencies of both group and individual integration, the mean for group integration more than doubling in the third grade and the mean for individual contacts showing an increase that was virtually significant.

TABLE 15

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF THE SAME CHILDREN IN THE SECOND AND THE THIRD GRADES IN CONSECUTIVE YEARS
(Observation time: two hours per child. N=27).

Child-Behavior Categories		r*	Room 2D38c		Room 3D39c		C.R.
			Mean	S.D.	Mean	S.D.	
N.H.	Nervous habits	0.24	42.6	15.6	99.2	24.4	11.5†
L.Up	Looking up	0.09	35.2	10.4	32.6	16.7	0.7
L.Seat	Leaves seat	0.17	6.1	3.9	3.6	2.9	2.9
Undet.	Undetermined child—child contacts	0.46	65.4	31.4	56.9	22.4	1.5
F.O.	Foreign objects	0.23	1.7	2.1	2.7	2.5	1.9†
P.	Conforming	-0.15	44.2	17.0	39.3	11.9	1.3
N-1	Commands other child	0.13	1.6	2.1	1.6	2.1	0.1
N-2	Attacks status of other child	-0.08	0.0	0.2	0.1	0.3	1.0
N-(1-2)	Dominates other children	0.10	1.7	2.1	1.7	2.3	0.0
M	Nonconforming	0.38	8.3	8.0	1.4	1.9	4.8
L-1	Answers spontaneously	0.35	1.2	1.5	1.4	2.0	0.6†
L-2	Holds up hand	0.15	11.7	10.1	9.4	6.7	1.1
L-3	Answers when called	0.13	4.8	3.9	11.5	7.7	4.3†
L-4	Fails to answer	0.65	0.3	0.8	0.4	0.9	0.3†
L-(1-4)	Response in recitation	0.22	18.0	13.0	22.6	13.6	1.4†

K-1	Seeks help	0.31	3.1	2.8	2.4	2.5	1.2
K-3	Contributes to own problem	-0.01	1.6	1.4	0.3	0.6	4.5
K-4	Contributes to other's problem	0.07	7.4	6.4	2.0	2.2	4.3
K-(3-4)	Contributes to own and other's problems	0.06	9.0	6.4	2.3	2.2	5.3
K-(1-4)	Problem solving	0.15	12.1	7.9	4.7	4.1	4.6
J-v	Voluntary:						
J-v-1	Tells experience	-0.06	1.3	4.0	2.3	2.7	1.1†
J-v-3	Suggestions	0.48	0.3	0.6	3.3	5.8	2.8†
J-v-5	Holds up hand	0.17	1.0	1.2	0.9	1.3	0.6
J-v-6	Appreciation	-0.13	0.1	0.3	0.4	1.2	1.3†
J-v-(1-6)	Total voluntary social contributions	0.04	3.2	4.2	7.0	9.9	1.9†
J-r	Response:						
J-r-1	Tells experience	-0.01	0.3	0.8	6.0	4.6	6.3†
J-r-3	Suggestions	0.39	0.2	0.5	1.5	2.5	2.8†
J-r-5	Holds up hand	-0.02	0.5	0.7	2.8	5.8	2.0†
J-r-(1-6)	Total social contributions in response	0.07	1.4	1.3	10.6	7.6	6.4†
J-(v & r)	Total social contributions	0.17	4.5	4.7	17.6	16.5	4.2†

*Since the children in rooms 2D38c and 3D39c are the same, the mean frequencies of child behavior in the two rooms represent correlated measures. The coefficient must be 0.44 to be four times its probable error.

†Indicates that the mean for third grade was larger.

d) The net changes in teacher contacts, from a mental hygiene point of view, were inconsistent but appear to represent mainly a change for the better in the third grade.

e) There was no consistency between the teachers in using group contacts with the same children; the coefficients of correlation showed, however, that there was a positive and reliable tendency for children who had high frequencies of individual domination—lecture method contacts in the second grade to rank high in frequencies of the same contacts in the third grade. Similar positive tendencies were shown for total individual domination and for total individual contacts.

f) In child behavior, reliable positive coefficients of correlation indicated some tendency for high frequencies in both second and third grades to be shown by the same children for the three categories of undetermined child-child contacts, fails to answer in recitation, and voluntary suggestions as a social contribution. In no other category or combination of categories was there evidence of the persistence of behavior patterns or personality characteristics in these children from the second to the third grade.

g) From a mental hygiene standpoint, the meaning of the differences in the behavior of the children in the second and third grades appears to be ambiguous. The children in the third grade showed significantly higher frequencies of total social contributions, there being twice as many voluntary social contributions and over eight times as many social contributions in response to others. On the other hand, they were significantly lower in problem solving and significantly higher in nervous habits.

IX. Comparison of Two Third-Grade Rooms

The data used in the comparison of the two third-grade rooms were obtained from the two groups of children who were consecutively studied in the second and in the third grades.

A. Teachers' group contacts

Table 16 shows the means and critical ratios of the differences between means for types of teacher contacts, both group and individual. With one exception, in which the difference was unreliable, teacher 3D used consistently higher mean frequencies of all types of group contacts. The differences were relatively large and significant for DC, domination in conflict; DT, domination in working together; and for each type of group integrative contacts and for total integrative contacts. Teacher 3D showed a mean frequency for total group contacts twenty-five per cent greater than that for teacher 3C, the critical ratio of the difference being 4.7.

The I-D ratios, given in Table 4, were 0.29 for teacher 3C39c and 0.39 for teacher 3D39c.

TABLE 16

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE CONTACTS OF TWO TEACHERS WITH DIFFERENT GROUPS OF THIRD-GRADE CHILDREN
(Observation time: two hours per child)

Type of Teacher Contact		Teacher 3C39c N = 22		Teacher 3D39c N = 27		C.R.
		Mean	S.D.	Mean	S.D.	
		Group Contacts				
DC	Domination in conflict	8.6	3.9	25.4	8.1	9.6*
DN-(1-8)	Domination with no conflict—directive	101.5	27.5	97.9	21.7	0.5
DN-(9-10)	Domination with no conflict—lecture method	82.7	31.7	93.8	29.0	1.3*
DN	Domination with no conflict .	184.2	44.1	191.7	42.1	0.6*
DT	Domination in working together	1.0	1.2	5.4	2.5	8.2*
	Total domination	193.7	47.7	222.4	43.7	2.2*
IN	Integration with no evidence of working together	54.6	11.7	82.9	26.3	5.0*
IT	Integration in working together	1.1	1.6	3.7	2.4	4.7*
	Total integration	55.6	11.6	86.7	26.9	5.4*
Total contacts		249.4	49.5	309.1	37.1	4.7*
		Individual Contacts				
DC	Domination in conflict	1.6	2.5	4.7	5.0	2.8*
DN-(1-8)	Domination with no conflict—directive	2.9	2.8	4.7	3.7	1.9*
DN-(9-10)	Domination with no conflict—lecture method	2.7	3.4	5.8	5.0	2.6*
DN	Domination with no conflict .	5.6	4.2	10.5	7.8	2.8*
DT	Domination in working together	1.6	1.7	2.4	1.9	1.6*
	Total domination	8.8	5.9	17.6	11.0	3.6*
IN	Integration with no evidence of working together	3.3	2.9	5.8	4.7	2.3*
IT	Integration in working together	11.4	9.1	2.4	2.2	4.5
	Total integration	14.6	9.5	8.3	5.7	2.8
Total contacts		23.4	13.4	25.9	13.9	0.6*

*Indicates that the mean for teacher 3D39c was larger.

B. Teachers' individual contacts

In her contacts with individual children teacher 3D was again more actively dominating than teacher 3C. Without exception, she was higher in all six comparisons of individual domination, the critical ratios of the differences being significant or approaching significance. In total individual dominative contacts the mean for teacher 3D was over twice the mean frequency per child for teacher 3C. These data were based on forty-four hours of observation of teacher 3C and fifty-four hours of observation of teacher 3D.

In individual contacts recorded under IN, integration with no evidence of working together, teacher 3D also showed a higher mean frequency than teacher 3C; the difference approached significance. With IN contacts the teacher tried to enlist the interest of the individual child in some activity, leaving the choice to him. In this type of contact teacher 3D showed higher frequencies than with IT, integration in working together, in which the teacher built upon some expressed interest of the child. In the individual IT contacts teacher 3D was significantly lower in mean frequencies, the difference being so great that the net difference for total individual contacts cancelled out into an unreliable difference between the two teachers.

The I-D ratios for individual contacts showed greater contrasts than those for group contacts. Teacher 3C actually used higher frequencies of integration than domination in her contacts with children as individuals; her I-D ratio, taken from Table 4, was 1.67. Teacher 3D, on the contrary, used less than half as much integration as domination in her contacts with the individual children in her room; her I-D ratio was only 0.47.

From a mental hygiene standpoint the net differences between teachers are difficult to evaluate. In the two third-grade rooms the psychological environments as measured by teacher contacts were different. Teacher 3D was much more active and had considerably more contacts with her children than did teacher 3C. She had more contacts of a group nature, both dominative and integrative. But in individual contacts her greater activity with individual children was shown mainly in domination, the significant difference for her greater activity in individual domination being accentuated by her considerably lower frequencies of integrative contacts. In total individual contacts teacher 3D was not significantly more active; the means were about the same. But a striking difference between teachers 3C and 3D was nevertheless shown in the contrasting respective I-D ratios of 1.67 and 0.47 for contacts with individual children.

C. Child behavior.

Table 17 shows the mean frequencies of child behavior for the two third-grade rooms, together with the critical ratios of the differences between rooms.

TABLE 17

COMPARISON OF MEAN FREQUENCIES PER CHILD OF THE BEHAVIOR OF TWO ROOMS OF THIRD-GRADE CHILDREN
(Observation time: two hours per child.)

Child-Behavior Categories		Room 3C39c N=22		Room 3D39c N=27		C.R.
		Mean	S.D.	Mean	S.D.	
N.H.	Nervous habits	118.3	14.1	99.2	24.4	3.4
L.Up	Looking up	35.3	11.5	32.6	16.7	0.7
L.Seat	Leaves seat	9.3	4.7	3.6	2.9	4.9
Undet.	Undetermined child—child contacts	90.2	48.4	56.9	22.4	3.0
F.O.	Foreign objects	2.4	1.7	2.7	2.5	0.6*
P	Conforming	37.7	14.4	39.3	11.9	0.4*
N-1	Commands other child	0.9	1.2	1.6	2.1	1.3*
N-2	Attacks status of other child	0.1	0.3	0.1	0.3	0.2*
N-(1-2)	Dominates other children	1.0	1.5	1.7	2.3	1.3*
M	Nonconforming	2.3	2.3	1.4	1.9	1.6
L-1	Answers spontaneously	0.4	0.8	1.4	2.0	2.4*
L-2	Holds up hand	5.2	3.3	9.4	6.7	2.9*
L-3	Answers when called	2.5	3.4	11.5	7.7	6.1*
L-4	Fails to answer	0.1	0.3	0.4	0.9	1.3*
L-(1-4)	Response in recitation	8.1	4.7	22.6	13.6	11.0*
K-1	Seeks help	6.7	5.6	2.4	2.5	3.3
K-3	Contributes to own problem	1.0	1.9	0.3	0.6	1.7
K-4	Contributes to other's problem	3.4	3.0	2.0	2.2	1.9
K-(3-4)	Contributes to own and other's problems	4.3	3.9	2.3	2.2	2.2
K-(1-4)	Problem solving	11.0	8.8	4.7	4.1	3.1
J-v	Voluntary:					
J-v-1	Tells experience	3.9	4.8	2.3	2.7	1.4
J-v-3	Suggestions	1.6	3.5	3.3	5.8	1.3*
J-v-5	Holds up hand	1.2	1.8	0.9	1.3	0.7
J-v-6	Appreciation	0.1	0.2	0.4	1.2	1.6*
J-v-(1-6)	Total voluntary social contributions	6.9	8.2	7.0	9.9	0.1*
J-r	Response:					
J-r-1	Tells experience	3.1	3.8	6.0	4.6	2.4*
J-r-3	Suggestions	0.1	0.5	1.5	2.5	2.7*
J-r-5	Holds up hand	1.9	3.4	2.8	5.8	0.7*
J-r-(1-6)	Total social contributions in response	5.2	4.4	10.6	7.6	3.2*
J-(v & r)	Total social contributions	12.1	9.0	17.6	16.5	1.5*

*Indicates that the mean for room 3D39c was larger.

Whatever the differences in the teacher contacts, there were no reliable differences in child behavior for categories of looking up at seat work, playing with foreign objects, conforming, attacks status of other child, or for the combined J-v categories of total voluntary social contributions.

The children with teacher 3D showed significantly higher mean frequencies in L-(1-4), total responses in recitation, and in the combined J-r-(1-6) categories representing total social contributions in response to request or invitation.

Since all the categories in which there were found significantly higher means for Room 3D were defined as responses to the teacher, these differences, together with the fact of no change in voluntary social contributions, would support the assumption that the children's behavior in Room 3D was reflecting directly the greater activity of the teacher in this room.

Unreliably higher frequencies for the children in Room 3D were found in the separate category of commands other child, a category which was included in dominates other children.

The children in Room 3D, however, showed significantly lower frequencies of nervous habits, leaves seat, undetermined child—child contacts, seeks help, and the combined categories K-(1-4), problem solving. Lower frequencies, with the difference approaching reliability, were also shown for the children in Room 3D in nonconforming, contributes to own problem, and contributes to other's problem. Wide individual variations from child to child were shown for both rooms in the relatively high standard deviations.

X. Intercorrelations of Teacher's Individual Contacts and Child Behavior

Intercorrelations for two of the samplings of data have been computed for twenty-nine variables, including six types of teacher contacts and twenty-three categories or combinations of categories of child behavior. The data for teachers 2C and 2D have been selected for the presentation of this method of analysis.

A. Room 2C39

Table 18 gives the coefficients of intercorrelation between the types of teacher contacts. A coefficient must be 0.44 to be four times its probable error. In the intercorrelations of teacher contacts there are three such reliable coefficients, all positive in sign.

The coefficient of 0.55 between DC, domination in conflict, and IT, integration in working together, means that there was a positive tendency for those who were more frequently frustrated in a situation of conflict with the teacher to be those who were found more frequently in situations in which the teacher was co-operating with them on the basis of their own

TABLE 18

INTERCORRELATIONS OF TEACHER'S INDIVIDUAL CONTACTS FOR ROOM 2C39*
(N = 27)

Type of Teacher Contact		DN-(1-8)	DN-(9-10)	DT	IN	IT
DC	Domination in conflict	0.07	0.02	0.12	0.27	0.55
DN-(1-8)	Domination—directive	....	0.75	0.28	0.35	0.23
DN-(9-10)	Domination—lecture method .	....	....	0.22	0.32	0.29
DT	Domination in working together	....	....	....	0.31	0.24
IN	Integration with no evidence of working together	....	....	....	....	0.66
IT	Integration in working together	....	....	....	....	....

*The coefficient must be 0.44 to be four times its probable error.

expressed interests. It is the positive correlation between the DC and IT categories that is intepreted as "cutting the vicious circle" in teacher-child relations. If a teacher had in her room a particularly unhappy child who was also energetic and negativistic, she might have to use high frequencies of DC contacts in order to maintain a school program that would interest the other children. But if the teacher were trying in addition to make a friend instead of an enemy of this child, to develop a relationship of rapport, co-operation, and understanding, one would expect this teacher to seek occasions in which she would have especially high frequencies of IT contacts. That is, domination incites resistance, breeds insecurity and suspicion, intensifies conflict. This is what is meant by the vicious circle of social behavior. Socially integrative behavior allays suspicion, induces security and mutual confidence, reduces conflict, is rapport-building. Socially integrative behavior "cuts the vicious circle" by changing a relationship of conflict to one of co-operation, by changing the motivational direction of behavior from working against to working with another.

This change in motivational direction, this cutting of the vicious circle of domination-resistance, this developing of rapport with those who are momentarily in conflict is the purpose of the clinical psychologist, the psychiatrist, the mental hygienist. The coefficient of 0.55 indicates that it was a practice also of teacher 2C39.

Table 19 shows the coefficients of intercorrelation between the types of teacher contacts and the categories of child behavior. Teacher 2C had a coefficient of 0.43 between her DC contacts and the child's L-1 behavior (answers spontaneously in recitation). A year earlier this same teacher showed a coefficient of 0.68 (9, chapter ii) between DC and L-1, that being the only reliable coefficient for her DC contacts that year.

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INTERCORRELATIONS OF TEACHER'S INDIVIDU
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	Type of Teacher Contact or Child Behavior	N.H.	L.Up	L. Seat	Un-det.	F.O.	P.
DC	Domination in conflict	-.33	-.15	-.14	.08	-.04	-.0
DN-(1-8)	Domination -directive	.00	.00	.00	.04	.01	.0
DN-(9-10)	Domination—lecture method	.07	-.17	.13	.06	.04	-.0
DT	Domination in working together	.01	.06	.41	.03	.17	-.0
IN	Integration with no evidence of working together	-.11	-.30	.29	.03	-.17	-.1
IT	Integration in working together	-.36	-.09	.28	.16	-.29	-.1
N.H.	Nervous habits	....	.07	.22	.34	.43	.
L.Up	Looking up	....	....	-.11	-.15	.27	.0
L.Seat	Leaves seat	....	....	....	.46	-.29	-.
Undet.	Undetermined child—child contacts	....	....	....	....	-.13	-.
F.O.	Playing with foreign objects	....	....	....	....	....	-.
P	Conforming	....	....	....	....	....	..
N	Dominates other child	....	....	....	....	....	..
M	Nonconforming	....	....	....	....	....	..
L-1	Answers spontaneously	....	....	....	....	....	..
L-2	Holds up hand	....	....	....	....	....	..
L-3	Answers when called	....	....	....	....	....	..
L-4	Fails to answer	....	....	....	....	....	..
K-1	Seeks help	....	....	....	....	....	..
K-3	Contributes to own problem	....	....	....	....	....	..
K-4	Contributes to other's problem	....	....	....	....	....	..
J-v-1	Tells experience voluntarily	....	....	....	....	....	..
J-v-3	Suggestions (voluntary)	....	....	....	....	....	..
J-v-5	Holds up hand (voluntary)	....	....	....	....	....	..
J-v-(1-6)	Volunteers social contribution	....	....	....	....	....	..
J-r-1	Tells experience in response	....	....	....	....	....	..
J-r-3	Suggestions (in response)	....	....	....	....	....	..
J-r-5	Holds up hand (in response)	....	....	....	....	....	..

CTS AND CHILD BEHAVIOR FOR ROOM 2C39

M.	L-1	L-2	L-3	L-4	K-1	K-3	K-4	J-v 1	J-v 3	J-v 5	J-v (1-6)	J-r 1	J-r 3	J-r 5	J-r (1-6)
.13	.43	-.10	.04	.14	.59	-.24	.55	.48	.54	-.22	.43	.31	.36	-.18	.29
-.22	.53	.25	.13	.43	.00	.35	.50	.37	.40	.04	.36	-.23	-.11	.14	-.18
-.09	.63	.19	.19	.59	.03	.20	.50	.38	.36	.00	.35	-.09	.01	.24	-.03
-.28	.42	.58	.19	.25	.09	-.02	.27	.58	.41	.29	.56	-.04	-.25	-.12	-.10
.09	.42	.36	.08	.14	.49	.39	.11	.65	.69	.39	.76	.51	.58	.60	.61
.13	.49	.01	.10	.32	.73	.14	.38	.76	.82	.01	.82	.72	.51	.24	.71
.10	-.29	.01	-.01	.04	-.25	-.04	-.47	-.27	-.38	.06	-.29	-.26	.02	.10	-.19
.10	-.28	-.10	-.06	-.14	.01	.11	-.12	-.17	-.12	.02	-.16	-.19	-.14	-.14	-.19
-.10	.26	.30	.12	.06	.19	.08	-.12	.43	.20	.14	.43	.17	.28	.03	.20
.06	.25	.00	.05	.16	.05	.18	.08	.22	.15	-.21	.15	-.07	.25	-.14	-.03
.17	-.15	-.09	-.02	.02	-.23	-.13	-.10	-.17	-.12	-.13	-.23	-.18	-.14	-.04	-.18
.05	-.07	-.06	-.01	.14	-.10	-.34	-.12	-.27	-.19	-.01	-.31	-.34	-.31	.04	-.32
.26	-.11	.06	-.01	-.31	.56	.11	-.15	.34	.18	.12	.33	.37	.59	.11	.42
....	-.13	-.28	-.03	-.25	.41	.05	-.24	-.07	-.08	-.24	-.11	.22	.38	.20	.27
....	....	.27	.23	.54	.27	.00	.80	.69	.69	.02	.63	-.04	.03	-.04	-.03
....	....	....	.19	-.12	-.06	.19	.04	.21	.07	.08	.34	-.11	-.19	.16	-.10
....	....	....	....	.07	.05	.01	.14	.15	.08	.11	.14	-.04	-.05	.00	-.04
....	....	....	....	....	.06	-.13	.51	.45	.55	-.25	.35	-.09	-.19	.04	-.11
....	....	....	....	....	....	-.10	.12	.60	.51	.04	.56	.50	.58	.22	.55
....	....	....	....	....	....	....	-.05	.07	.10	.16	.16	.14	.30	.23	.20
....	....	....	....	....	....	....	....	.57	.58	-.18	.48	-.15	-.15	-.30	-.19
....	....	....	....	....	....	....	....	....	.86	.14	....	.33	.32	.10	.34
....	....	....	....	....	....	....	....	....	....	.00	....	.40	.30	.11	.39
....	....	....	....	....	....	....	....	....	....	....	....	.08	-.05	.40	.12
....	....	....	....	....	....	....	....	....	....	....	....	.45	.34	.19	.45
....	....	....	....	....	....	....	....	....	....	....	....	....	.60	.39	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

K-1, seeks help, is another measure of spontaneity. It had a coefficient of 0.59 with DC. The category K-1 had been defined originally as one of the four categories denoting problem-solving. The observers felt that it came to include a considerable number of instances of behavior not in the nature of problem-solving as defined for K-3 or K-4 but an escape from problem-solving. A child might come to the teacher to get her to do something which she thought the child should do himself. It would be possible for the teacher to lead the child into his own problem by an integrative contact or series of such contacts or to rebuff him and leave him alone to work his way out. The coefficient of 0.59 between DC and K-1 indicates that those children who tended most to seek help from teacher 2C tended also to be high in DC contacts.

K-3 is another measure of spontaneity, but it was often checked after the teacher had led the child up to the point at which he appeared to have a better definition of the problem. K-3, however, had only an unreliable negative relation with DC.

K-4, another measure of spontaneity, was more often than K-3 checked without the previous intervention or contribution of the teacher. K-4 had a positive coefficient of correlation of 0.55 with DC contacts.

The J-v categories are measures of voluntary or spontaneous social contributions. The teacher's DC contacts had coefficients of 0.48, 0.54, and 0.43, respectively, with J-v-1, J-v-3, and the total of J-v categories of voluntary social contributions.

K-4 and the J-v categories were defined also as harmonious behavior. Children who were high in several categories of spontaneous and harmonious behavior were high also in receiving individual domination in conflict situations with the teacher.

The two categories, N, dominates other children, and M, nonconforming, were defined as unharmonious behavior, yet there were only unreliable relations between those categories and the teacher's DC contacts. These unreliable coefficients show that the teacher did not take direct issue with those children by meeting the child's aggression toward other children with agression toward the child himself. Here again teacher 2C39 was cutting the vicious circle. There was an unreliable relation between categories N and M on the one hand and any type of this teacher's contacts.

DC and IT were both defined as the teacher's response to some expressed interest or activity of the child. Teacher 2C showed a reliable relationship in the correlation of these two types of contacts. The low and unreliable correlation between DC and IN shows that teacher 2C did not tend to initiate integrative contacts of this sort with those children whom she dominated in conflict situations.

The fact that DC showed no reliable relation with any of the other types of domination for this teacher would constitute a validation of DC contacts as defined and would justify the separation of these types of contacts.

DN-(1-8), domination with no evidence of conflict, includes several categories of domination in which the child demonstrates no evidence of conflict. For teacher 2C, DN-(1-8) had a coefficient of correlation of 0.75 with DN-(9-10), lecture method contacts. Those children who were directed most tended to be high in receiving gratuitous questions or statements recorded as lecture method. The high relation between DN-(1-8) and DN-(9-10) receives consistent support in the intercorrelations of these respective categories with the other categories in Table 19. There were three categories which showed reliable positive relations with both types of domination, and there were no other reliable coefficients for either type. Moreover, there were a number of cases where even unreliable coefficients for one were matched by coefficients for the other only a few points different in amount. For this teacher the continued separation of DN-(1-8) and DN-(9-10) would seem unjustified.

DT contacts, as defined, were validated by the fact that there were no reliable correlations between DT and any of the other types of teacher contacts; this type represents the mildest form of domination. When, for example, two or more children have held up their hands expressing a desire to recite and the teacher makes a choice as to who shall recite, the teacher's designation of a child is checked as DT, domination in working together. The coefficient of correlation of 0.58 with L-2, holds up hand, was somewhat to be expected. Nevertheless, it could happen, as it did happen with one other teacher, that there might be no tendency for the children who held up their hands to be called on to recite.

DT, domination in working together, had coefficients of 0.58 and 0.56, respectively, for J-v-1 and the total for combined J-v-(1-6) categories. L-1, answers spontaneously in recitation, had a correlation of 0.42 with DT contacts. L-1 also had correlations of 0.69 with J-v-1, 0.69 with J-v-3, 0.63 with J-v-(1-6), and 0.80 with K-4, contributes to other's problem, also a category of voluntary or spontaneous behavior. Neither L-1 nor DT contacts had a reliable relation with any of the J-r categories, social contributions in response to others.

DT had a correlation of 0.41 with leaves seat. But leaves seat also had positive relations with certain other categories of voluntary behavior, shown by the correlation of 0.46 with undetermined child—child contacts; -0.35 with conforming, which is not voluntary behavior; 0.43 with J-v-1; and 0.43 with J-v-(1-6). Leaves seat had only unreliable coefficients of correlation with the J-r categories.

The IN contacts of teacher 2C had only low coefficients of correlation with all types of domination. The meaning of these coefficients is that with those children high in dominative contacts, even with those children who were more often dominated in situations of conflict with the teacher, the teacher showed no tendency to introduce integrative relations based on some new idea, interest, or activity for the child. But she did tend more frequently to build upon some expressed interest of the child and to establish integrative relations with those children who were more often

in conflict with her. This was noted above in the correlation of 0.55 between DC and IT.

There was a relatively high positive relation between the two types of integrative contacts, as shown in the correlation of 0.66 between IN and IT. This relation is rather consistently supported by the correlations between each of these integrative contacts on the one hand and the categories of child behavior. With one exception, in which IN had a reliable correlation with a category of child behavior, IT also had a reliable correlation with the same category. All reliable correlations with either IN or IT were positive.

With two exceptions, which can be explained on the basis of the definitions of the categories, in all cases where IN and IT had reliable coefficients of correlation with categories of child behavior, IT had the higher coefficient. This fact would indicate a tendency on the part of teacher 2C to build upon an expressed interest of these children rather than to suggest new ideas or activities of her own. This interpretation is borne out by the considerably higher mean frequencies of individual IT contacts as compared with IN.

Without exception, IN and IT both had unreliable coefficients but consistently negative signs for the correlations with nervous habits, looking up, playing with foreign objects, and conforming. To the extent that the negative signs may have any meaning whatever, they would indicate a tendency toward nonconfronting with those children who showed high frequencies of nervous habits, looking up, and playing with foreign objects. The consistent negative signs of the coefficients of correlation between these three categories and the teacher's DC contacts, together with unreliable coefficients for the other types of teacher contacts, would bear out the assumption of a tendency toward nonconfronting of the teacher with those children who were high in these categories. The negative signs would also be consistent with the assumption that the more integrative contacts a child received, the less he tended to have nervous habits, to look up at seat work, and to play with foreign objects; also that the more the teacher dominated the child in conflict situations, the less he expressed these three kinds of behavior.

IN and IT had respective coefficients of correlation with the following categories of voluntary or spontaneous behavior of: 0.42 and 0.49 with L-1, answers spontaneously in recitation; 0.49 and 0.73 with K-1, seeks help; 0.65 and 0.76 with J-v-1; 0.69 and 0.82 with J-v-3; and 0.76 and 0.82 with J-v-(1-6), total voluntary social contributions. The facts that in each case IT had the higher coefficient and that each of the above categories of child behavior had a reliable positive relation with DC contacts are consistent with the coefficient of 0.55 between DC and IT. These coefficients may be regarded as an expression of internal consistency in the data. IN and IT had respective correlations of 0.51 and 0.72 with J-r-1, 0.58 and 0.51 with J-r-3, and 0.61 and 0.71 with J-r-(1-6). These relations bear out the assumptions regarding a positive relation between

the teacher's integrative contacts and the child's social contributions, which are also defined as integrative behavior. The coefficients for IN indicate that the child's social contributions were related to integrative contacts initiated by the teacher. The coefficients for IT indicate that the teacher built upon those expressed ideas or interests of the child which were in the nature of social contributions in response to others. It was noted, however, that none of these integrative social responses of the children was related to any type of domination by the teacher.

The fact that the J-v categories, in contrast to the J-r categories, were positively related to the teacher's DC contacts means that, as far as teacher 2C39 was concerned, the J-r categories were more integrative or harmonious. In fact, some of the J-v behavior was regarded by the teacher as inappropriate or unacceptable, even when such behavior might not have been so regarded by the children.

Nervous habits showed no reliable relation with any type of teacher contact. A coefficient of 0.47 showed a reliable tendency for those high in nervous habits to be high in playing with foreign objects. The more nervous habits the children had, the less they tended to contribute to other's problems, the coefficient between N.H. and K-4 was -0.47, the highest negative coefficient in Table 19. Nervous habits had zero or unreliable negative relations with the other problem-solving categories and the social contributions. Children who had high frequencies of nervous habits would seem to be those who in other respects showed some tendency toward nonconfronting of others.

Looking up had no reliable correlation with any type of teacher contact or category of child behavior. Nineteen negative signs out of twenty-eight coefficients would seem to indicate some tendency for this category, too, to be a measure of social nonconfronting.

Leaves seat was a descriptive category, with an unknown number of reasons for the child's leaving his seat. This category included only voluntary behavior; if the teacher told him to do something that required him to leave his seat, some other category was checked. Leaves seat was positively related to J-v-1 and J-v-(1-6) and to the teacher's DT contacts, which were also positively and reliably related to J-v-1 and J-v-(1-6). Leaves seat was most highly related to the undetermined child—child contacts; the coefficient of 0.46 for the correlation with leaves seat was the only reliable coefficient for the undetermined child—child contacts.

Playing with foreign objects was unrelated to any type of teacher contact. It was positively and reliably related to nervous habits but had no other reliable coefficient. Its consistent negative sign for eleven coefficients of correlation with all the K and J categories shows some tendency for this category to be a measure of social nonconfronting.

Neither conforming nor nonconforming was reliably related to any other kind of behavior measured. No coefficients involving group contacts were computed for this study, but Brewer has unpublished coefficients for teacher 2C for the preceding year that show conforming to

have been a response to group domination. He found conforming to have coefficients of correlation of 0.83 and 0.53, respectively, with group DN-(1-8) contacts and group DT contacts.

Conforming had twenty-one negative signs out of twenty-eight coefficients of correlation with the teacher's individual contacts and child behavior. The negative signs indicate a tendency for those who conformed most to be those who were least active socially.

N includes two categories of domination of other children. It had positive and reliable relations with K-1, seeks help, and with J-r-3, suggestions in response to others. No explanation is offered for these relationships.

The L categories were defined to include behavior restricted to the recitation situation. L-1, answers spontaneously, had a correlation of 0.54 with L-4, fails to answer in recitation. Since the mean frequencies of L-4 were very small, a possible explanation of this positive relationship is that certain children tended to answer spontaneously when they knew the answers but that when no one answered the teacher called on those who most often answered spontaneously. This explanation is supported by the correlations of 0.63 between L-1 and DN-(9-10) and 0.59 between L-4 and DN-(9-10). Similar relations were found in the coefficients of correlation between DN-(1-8) and L-1 and L-4 respectively. It has been pointed out that DN-(1-8) and DN-(9-10) were positively correlated and consistently related with other categories of child behavior.

L-1 had reliable coefficients of correlation with several other categories of voluntary social behavior: 0.80 with K-4, contributes to other's problem; 0.69 each with J-v-1 and J-v-3; and 0.63 with J-v-(1-6). It had unreliable correlations with all J-r categories. L-1, therefore, seems to be a category of spontaneous behavior, though not necessarily integrative, as shown by the zero relations with J-r. That answering spontaneously was not always behavior that took others into account was supported by the correlation of 0.43 between L-1 and DC, domination in conflict.

Holds up hand seems to be characteristic of some children. The coefficient of correlation of 0.78 between L-2 and J-v-5 indicates that the children who held up their hands in recitation tended to hold up their hands on other occasions. In fact, J-v-5 had no reliable correlation with any other category.

The coefficient of 0.58 between teacher's DT contacts and L-2 would indicate a reliable tendency for those who held up their hands to be called on.

L-2, holds up hand, was not related to L-1, answers spontaneously. It might seem that those who held up their hands in recitation instead of answering spontaneously (perhaps trying to get ahead of someone else) were taking others more into account. But L-2 had no reliable relation with any category of child behavior, including the J-v and J-r categories and the K categories of problem-solving.

L-3, answers when called on in recitation, had no reliable relation with any type of teacher contact or with child behavior.

It was mentioned above that category K-1, seeks help, seemed at times to be an ambiguous category. Some children sought help on problems they obviously did not understand or could not do. Other children went to the teacher asking for help ostensibly without having made any effort themselves to understand or to solve the problem. On other occasions it appeared to the observers that seeking help was more an effort to get attention or to enlist the sympathy of the teacher. Certain children appeared to be so dependent on the teacher that they were afraid to go ahead without first asking the teacher if what they were doing was all right.

The correlation of 0.59 between K-1 and the teacher's DC contacts could have one or both of two interpretations: either teacher 2C attempted to discourage some of the children who came to her seeking help, or those children who found themselves more frequently in conflict with the teacher came to her seeking approbation. The fact that both types of integrative contacts, especially IT, had reliable relations with K-1 indicates that the teacher gave them help when they sought it, and herself introduced integrative relationships with those who tended to seek help.

The children who tended to dominate other children tended to go to the teacher "seeking help." A nearly reliable coefficient reveals a tendency for those who were high in nonconforming to be high in K-1, seeks help. Positive and reliable relations were shown also between K-1 and the J-v-(1-6) and the J-r-(1-6) categories. These relations of K-1 with the J-v and the J-r categories would indicate that some amount of seeks help was related to the voluntary social behavior and to the integrative social responses to others.

K-3, contributes to own problem, had no reliable relation with any type of teacher contact or category of child behavior. The frequency of this category, however, was very low.

K-4, contributes to other's problem, is a category which includes expressions of initiative in social behavior. It had consistent negative, though unreliable, coefficients of correlation with all J-r categories, which were defined as social behavior in response to others. K-4 had positive and reliable relations with J-v-1, J-v-3, and J-v-(1-6) which, being categories of voluntary behavior, are similarly expressions of initiative. The fact that there was a coefficient of only 0.18 with J-v-5 is not inconsistent, for holds up hand, though voluntary and though expressing initiative, may be regarded as a somewhat different category.

K-4 had a high relation with another category expressing initiative, L-1, answers spontaneously in recitation, and a reliable but somewhat lower relation with L-4, fails to answer, which was seen above to be related to L-1.

K-4 had a reliable negative relation with nervous habits, the coefficient of -0.47 being the highest negative one in Table 19. This coefficient is consistent with the assumption that initiative was being measured in

category K-4 and that lack of initiative was associated with the category nervous habits.

The fact that K-4 was not reliably related to either type of teacher's integrative contacts but was reliably related to three types of teacher's dominative contacts would seem to indicate that the behavior expressed by the children showing high frequencies of such initiative as was found in K-4 was not always harmonious or welcomed by the teacher.

The highest positive correlation in Table 19 is that of 0.86 between J-v-1 and J-v-3. Their high relation was confirmed by a whole series of almost equivalent coefficients of correlation with other categories. They are both defined as voluntary or spontaneous behavior and both are expressions of initiative. They both had very high relations with the teacher's IT contacts. Since IT contacts are based on some expressed interest or activity of the child, these high relations mean that teacher 2C was responding co-operatively to the child's behavior under J-v-1 and J-v-3.

The coefficients of 0.65 and 0.69 between the teacher's IN contacts and J-v-1 and J-v-3, respectively, indicate that the teacher herself initiated integrative contacts with those children who were high in these categories. However, there were coefficients of correlation of 0.48 and 0.54, respectively, with teacher's DC contacts, indicating that the behavior of children high in J-v-1 and J-v-3 was frequently in conflict with the teacher.

J-v-5 had no significant relations with any other category; the highest coefficient was 0.40 for the correlation with J-r-5, both categories being holding up hand.

J-v-(1-6) includes three categories in which behavior was infrequently observed and which have been omitted from the separate computations from Table 19. However, J-v-1 and J-v-3 comprise 66 per cent of the data for J-v-(1-6). The correlations involving this combination of data followed in essential pattern the coefficients found for J-v-1 or for J-v-3. One noticeable difference is that there was a reliable correlation of 0.45 between J-v-(1-6) and J-r-(1-6). However, in spite of this coefficient, the J-v and the J-r categories seemed to measure different kinds of behavior. None of the J-v categories alone had a reliable relationship with any one of the J-r categories.

Other differences have been noted. For example, L-1, answers spontaneously, had positive reliable relations with J-v-1, J-v-3, and J-v-(1-6) but only unreliable relations with the J-r categories. Similar contrasts were offered in the correlations with L-4 and K-4, both being measures of initiative or spontaneity.

J-r-1 and J-r-3 had a relatively high relation as expressed by the coefficient of 0.60. They followed essentially similar patterns of relationship in the coefficients of correlation with other categories.

Unlike J-v, the J-r categories showed no relation with teacher's domination. It is highly probable that the J-r behavior is integrative and harmonious, though perhaps quieter and less boisterous. J-r is not a

kind of conforming, for the coefficients for conforming, though unreliable, had negative signs.

The fact that high correlations were found between K-1, seeks help, and the J-r categories may be explained by the ambiguity in K-1 just mentioned.

J-r-5 had only one reliable coefficient; it was thus different from J-v-5, which had no reliable coefficient. J-r-5 correlated positively with teacher's IN contacts, the coefficient of 0.60 meaning that the children responded to the teacher's initiated integrative contacts by raising their hands in response.

In general it can be said that the intercorrelations have shown a number of patterns representing internal consistency of the data and thus contributing to the validity of the categories as defined.

B. Room 2D39

Table 20 presents the coefficients of intercorrelation between the types of teacher contacts. Table 21 gives the coefficients of intercorrelation between the types of teacher contacts and the categories of child behavior. With N=28, a coefficient must be 0.44 to be four times its probable error.

TABLE 20

INTERCORRELATIONS OF TEACHER'S INDIVIDUAL CONTACTS FOR ROOM 2D39* (N=28)

Type of Teacher Contact		DN-(1-8)	DN-(9-10)	DT	IN	IT
DC	Domination in conflict	0.25	0.28	0.36	0.07	0.24
DN-(1-8)	Domination—directive	....	0.78	0.63	0.32	0.39
DN-(9-10)	Domination—lecture method	....	....	-0.01	0.15	0.69
DT	Domination in working together	....	....	....	0.11	0.58
IN	Integration with no evidence of working together	....	....	....	....	0.06
IT	Integration in working together	....	....	....	....	....

*A coefficient must be 0.44 to be four times its probable error.

Teacher 2D had no reliable coefficients of correlation between DC, domination in conflict, and any other type of teacher contact. This means that with those children who were high in frequency of DC contacts the teacher showed no systematic use of any contacts other than those designed to obstruct or to frustrate the children.

DC, domination in conflict, had no reliable negative coefficients of correlation with any category of child behavior. It had reliable positive relations with N, dominates other children, and M, nonconforming. This

INTERCORRELATIONS OF TEACHER'S INDIVI

Type of Teacher Contact or Child Behavior		N.H.	L.Up	L. Seat	Un-det.	F.O.	F
DC	Domination in conflict	.26	-.09	-.04	-.05	.00	-.
DN-(1-8)	Domination—directive	.14	.09	-.04	-.32	.07	.
DN-(9-10)	Domination—lecture method	.18	.07	.03	-.32	.01	.
DT	Domination in working together	.28	.02	-.19	-.50	.14	.
IN	Integration with no evidence of working together	-.15	-.20	-.02	-.13	-.09	-.
IT	Integration in working together	.12	.18	.08	-.22	-.10	.
N.H.	Nervous habits	....	.24	-.11	-.15	.27	-.
L.Up	Looking up	....	....	-.11	-.14	-.15	-.
L.Seat	Leaves seat	....	....	....	.42	-.16	.
Undet.	Undetermined child—child contacts	....	....	....	....	-.06	-.
F.O.	Foreign objects	....	....	....	....	....	-.
P.	Conforming	....	....	....	....	....	..
N	Dominates other child	....	....	....	....	....	..
M	Nonconforming	....	....	....	....	....	..
L-1	Answers spontaneously	....	....	....	....	....	..
L-2	Holds up hand	....	....	....	....	....	..
L-3	Answers when called	....	....	....	....	....	..
L-4	Fails to answer	....	....	....	....	....	..
K-1	Seeks help	....	....	....	....	....	..
K-3	Contributes to own problem	....	....	....	....	....	..
K-4	Contributes to other's problem	....	....	....	....	....	..
J-v-1	Tells experience voluntarily	....	....	....	....	....	..
J-v-3	Suggestions (voluntary)	....	....	....	....	....	..
J-v-5	Holds up hand (voluntary)	....	....	....	....	....	..
J-v-(1-6	Voluntary social contributions	....	....	....	....	....	..
J-r-1	Tells experience in response	....	....	....	....	....	..
J-r-3	Suggestions (in response)	....	....	....	....	....	..
J-r-5	Holds up hand (in response)	....	....	....	....	....	..

CTS AND CHILD BEHAVIOR FOR ROOM 2D39

M	L-1	L-2	L-3	L-4	K-1	K-3	K-4	J-v 1	J-v 3	J-v 5	J-v (1-6)	J-r 1	J-r 3	J-r 5	J-r (1-6)
.51	.16	.09	.04	.34	.48	-.15	-.04	.13	.39	.23	.32	-.09	.34	.44	.16
-.03	.58	.26	.48	.38	.60	-.23	.31	.10	.09	.18	.18	-.20	.38	.28	-.02
.06	.61	.43	.59	.45	.73	-.24	.52	.21	.07	.38	.33	-.07	.32	.36	.13
-.11	.61	.62	.70	.35	.54	.02	.35	.12	.30	.33	.32	-.02	.38	.19	.22
-.14	.09	.16	.09	.32	.27	.09	.25	.12	.11	-.15	.12	.09	.32	.22	.29
.13	.35	.60	.63	.29	.67	.26	.47	.55	.22	.54	.69	-.11	.31	.01	.03
.34	.14	.22	.24	.17	-.01	-.10	-.20	-.29	.37	-.07	-.10	-.24	.28	.13	.02
-.22	.11	.18	.17	-.03	-.11	.16	.02	-.04	-.14	.01	-.09	-.13	-.01	-.11	-.14
.22	.17	-.10	-.20	.07	.27	-.21	.35	.30	-.24	.16	.21	-.13	-.27	.13	-.07
.14	-.25	-.41	-.46	-.24	-.17	-.18	-.13	.23	-.19	-.36	.04	-.22	-.36	.06	-.19
.11	-.12	.02	.39	.16	-.06	.09	-.18	-.29	-.29	-.02	-.29	-.10	-.15	-.15	-.21
-.05	-.07	-.02	.18	-.06	.19	.15	.02	.10	-.06	.15	.05	-.19	.09	-.32	-.30
.47	.02	-.29	-.19	.31	.21	-.16	-.10	.05	-.07	-.10	.03	-.34	-.13	-.30	-.41
....	-.06	-.22	-.27	-.07	.15	-.13	-.11	.19	-.01	.20	.17	.02	-.06	.05	.04
....	....	.37	.50	.28	.40	-.22	.37	.05	.14	.21	.16	-.13	.09	.02	-.02
....	....	....	.65	.33	.28	.47	.54	.01	.11	.00	.17	-.12	.34	.29	.17
....	....	....	....	.21	.38	.28	.40	.09	.17	.24	.22	-.09	.22	-.09	-.01
....	....	....	....	....	.49	.02	.22	-.12	-.06	.36	.07	-.11	-.02	-.12	-.15
....	....	....	....	....	....	-.19	.36	.43	.05	.54	.56	-.15	.31	-.07	-.01
....	....	....	....	....	....	....	.06	.08	.08	.03	.09	-.11	.08	-.02	-.10
....	....	....	....	....	....	....	....	.17	-.10	.03	.18	-.01	.13	.33	.23
....	....	....	....	....	....	....	....	....	.23	.02	....	-.13	.24	.00	.00
....	....	....	....	....	....	....	....	....	....	-.13	....	-.10	.67	.28	.31
....	....	....	....	....	....	....	....	....	....	....	....	.15	-.04	-.21	-.03
....	....	....	....	....	....	....	....	....	....	....	....	-.12	.42	.02	.08
....	....	....	....	....	....	....	....	....	....	....	....	....	-.18	.22	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	.45	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

follows out the assumption that domination produces domination or resistance. The more the child in this room found himself in conflict with the teacher, the more he tended to dominate other children. Or, the more a child tended to dominate other children, the more he found himself in conflict with the teacher and dominated by her. Moreover, the more the teacher dominated the child the more he tended to be nonconforming. If the object of the teacher in the first place was to produce conformity by the use of domination, this teacher was using a technique that was effectively defeating her own purpose. DC contacts had an unreliable negative coefficient of correlation with P, conforming.

It could also be said that the more the child showed nonconforming behavior as a response to any type of domination by the teacher, the more he found the teacher actively working against him in a conflict situation.

The coefficient of correlation of 0.47 between N and M reveals a significant tendency of domination in the child's behavior. The more a child resisted the teacher, the more he dominated other children; and the more he dominated other children, the more he resisted the teacher. These coefficients would support the following not absurd assumptions regarding the circular nature of dominative behavior: the more a child found himself dominated in a conflict situation, the more he resisted the teacher; the more he resisted the teacher, the more he dominated other children; and the more he dominated other children the more he found himself dominated in a conflict situation by the teacher. Other coefficients show that this teacher did nothing systematically to break this vicious circle. Three of the four low coefficients of correlation between the two types of integrative contacts and N amd M were even negative in sign. In fact, N and M were reliably related only to each other and to the teacher's domination in conflict. In this tendency toward quarreling and conflict among the children on the one hand and between the children and the teacher on the other there was no systematic attempt by the teacher to use friendly, nonauthoritarian techniques with the children.

DC, domination in conflict, had a coefficient of correlation of 0.48 with K-1, seeks help. In view of the ambiguity of the category K-1, discussed above, this coefficient has at least two meanings: The children who came to this teacher seeking help tended to be rebuffed; and the children who received DC contacts tended to approach the teacher "seeking help."

DC, domination in conflict, had a reliable coefficient of 0.44 with J-r-5, holds up hand. No explanation is offered for this coefficient. J-r-5 was unreliably related to every other type of teacher contact and category of child behavior, except J-r-3.

DN-(1-8), domination-directive contacts had a correlation of 0.78 with DN-(9-10), lecture method contacts. This was approximately the same relation found for teacher 2C39. The high relationship was not supported consistently by closely similar coefficients in their correlations with other categories. DT, for example, had a reliable relation to DN-(1-8) but no relation to DN-(9-10). IT had a reliable relationship with DN-(9-10) but an unreliable relationship with DN-(1-8). Neither DN-(1-8)

nor DN-(9-10) had a reliable relation to IT contacts. In the coefficients of correlation with child-behavior categories the high relation between the DN-(1-8) and DN-(9-10) contacts was more consistently supported. No explanation is apparent for these intercorrelations of the types of contacts for this teacher.

The DN contacts, both directive and lecture method, were reliably related to the categories of response in recitation for seven of the eight coefficients. They were also positively and reliably related to K-1, seeks help. With teacher 2C39 there were only zero coefficients for the correlation of DN-(1-8) and DN-(9-10) with K-1; these were in contrast with the respective coefficients of 0.60 and 0.73 for teacher 2D39. It was the opinion of the observers that the directions and instructions of teacher 2D39 were often unintelligible and highly confusing to the children, as well as to the observers, and that those children who had been given individual instructions often came back to have the directions repeated.

DN-(1-8) and DN-(9-10) had only unreliable relations with the J-v and J-r categories of social behavior.

The teacher's DT contacts, domination in working together, were reliably related to IT, integration in working together. It appeared that in the DT contacts teacher 2D39 selected and approved those children with whom she also showed integrative relations in her IT contacts.

The coefficient of -0.50 between DT contacts and undetermined child—child contacts probably means that the teacher gave approval and selected children less frequently among those who whispered; or it could mean that the less frequently the children were selected the more they engaged in the undetermined child—child contacts. There is some evidence that with this teacher there was a tendency for some children to behave more overtly and for others to work under cover. For example, twenty-two out of twenty-eight coefficients involving undetermined child—child contacts were negative in sign. The coefficients between the undetermined child—child contacts and the four categories of response in recitation were uniformly negative in sign, two being reliable. This would mean that the more they recited the less they tended to whisper. It may mean that some children obtained their satisfactions in recitation while others tended to get their satisfactions in personal communication.

DT contacts were reliably related to three of the four categories of response in recitation. Both those who answered spontaneously and those who held up their hands tended to be called upon by the teacher. There was a tendency for those who answered spontaneously to answer when called.

DT contacts were reliably related to K-1, seeks help but not to the two other categories of problem solving; nor were they reliably related to any of the categories of social contributions.

IN and IT contacts had only a zero relation with each other. But IN was also unreliably related to every other type of teacher contact and to every category of child behavior. There was no evidence that teacher

2D39 made a systematic effort of any kind or under any circumstances to elicit the child's interest by a co-operative approach of her own initiating.

IT was highly related to DN-(9-10) and to DT contacts. Those children who more frequently found the teacher building upon their own expressed ideas or interests also tended more frequently to be asked in recitation or to be selected from among volunteers for some activity.

IT was reliably related to L-2, holds up hand, and L-3, answers when called in recitation.

A coefficient of correlation of 0.67 between IT and K-1 indicates that teacher 2D39 worked with the children who sought help. She also tended to work integratively with those children who expressed initiative in several categories, namely, K-4, contributes to other's problem, J-v-1, J-v-5, and J-v-(1-6). There was, however, only a zero relation between IT contacts and the J-r categories, which is further evidence that J-v and J-r measure different kinds of behavior.

Nervous habits, looking up at seat, leaves seat, plays with foreign objects, and conforming behavior each had only unreliable coefficients of correlation with all types of teacher contacts and all categories of child behavior.

L-1, answers spontaneously in recitation, is a category expressing initiative. It was reliably related to DN-(1-8), DN-(9-10), and DT contacts, and to L-3, answers when called. L-1 was not reliably related to any other category; it was thus a measure of initiative only in the recitation situation and was not related to the measures of initiative of any other kind.

L-2, holds up hand in recitation, was reliably related to the teacher's IT contacts and to the two other types, DN-(9-10) and DT, with which IT was also reliably related. The child who held up his hand in recitation tended to be asked questions and to be selected among volunteers for an activity; he also tended to have the teacher build upon his own expressed ideas or interests in an integrative way.

L-2 was also reliably related to L-3, indicating that when the child who held up his hand was called upon to recite he was able to give the answer.

The child who tended to hold up his hand in recitation tended also to contribute to his own and to other's problems. This form of initiative was unreliably related to the other forms of social contribution.

L-3, answers when called, is a response in recitation. It was reliably related to two categories of teacher contacts having to do with recitations, DN-(9-10) and DT. L-3 had a coefficient of correlation of 0.63 with IT contacts. Since L-3 was not highly related to the other categories of problem-solving or to social contributions, this coefficient seems to indicate that the teacher tended to show integrative contacts with children who had the answers in recitation.

L-3 was not reliably related to the K categories of problem solving or to the voluntary social contributions, with which IT was reliably related. The teacher tended to ask questions of those who failed to answer, and those who failed to answer also tended to seek help.

K-1, seeks help, was reliably related to all types of teacher contacts except IN, to which no category was reliably related; it was also reliably related to L-4 and to J-v-5, holds up hand. It appears that J-v-5 may be a form of seeking help.

K-3, contributes to own problem, was reliably related only to L-2, holds up hand in recitation. It can be noted that in this room the child who tended to contribute to his own problem showed no systematic tendency to express himself in any of the other forms of initiative or social behavior.

K-4, contributes to other's problem, had unreliable relations to the other forms of social contributions in the J-v and J-r categories and to all other categories of child behavior except L-2, holds up hand. It had reliable coefficients of correlation with DN-(9-10) and IT contacts.

J-v-1 was positively related to IT and to K-1, to both of which J-v-5 was also reliably related; J-v-1 and J-v-5 were unrelated to each other.

J-v-3 was reliably related only to J-r-3. Those children who voluntarily made suggestions also made them in response to the request or invitation of others.

J-r-(1-6) categories combined were reliably related to no types of teacher contacts or to any other categories of child behavior.

The coefficients of intercorrelation for the data for 2D39 showed a number of unexplained relations in the behavior of the teacher and of the children. But they also indicate a number of patterns of internal consistency and tend to confirm the contrasts between teachers 2C and 2D revealed in the other analyses of the data.

XI. The Use of Competition

The measures x, fosters competition between or among the children, z, fosters co-operation, and ch, gives the child a choice, occurred infrequently for most of the teachers, and, as mentioned previously, percentages of agreement between observers showed low reliability. Since observers recorded no z and too few ch tallies to secure a measure of reliability in recording, these measures have not been considered. Because observers P and Q had inadequate opportunity for recording x measures to achieve a reasonable percentage of reliability, it was not possible to evaluate this measure for room 2C39 where observers P and Q assisted in observing. Only the measure x, as recorded by observers X and Y in rooms 2D39, 3C39c, and 3D39c, are discussed here.

There were differences among the teachers in the frequencies of their use of x in group contacts, but smaller differences in their employment of x for individuals. In connection with group contacts, during a period of

two hours teacher 3D39c used a mean per child of 6 contacts motivating them to compete with their fellows; teacher 2D39 used a mean per child of 1.3 such contacts; and teacher 3C39c used only a mean per child of .5. On the average then, the children as a group in room 3D39c were urged thirteen times as often as were the children in the other third grade to be better than or to win over someone else.

XII. Summary

In a previous investigation J. E. Brewer (9, chapter ii), studied the classroom behavior of teachers and children in two second-grade rooms in the same building. He recorded the teachers' contacts with the children in categories of dominative and of socially integrative behavior. An individual contact was a teacher's contact with one child. A group contact was a contact with two or more children.

Brewer also defined twenty-nine categories of child behavior in which he recorded the classroom behavior of the children. He showed that the behavior of both teachers and children could be recorded reliably in these categories.

Brewer found an array of statistically reliable differences in the classroom personality patterns of the two teachers. One teacher, 2C, was consistently more integrative; the other teacher, 2D, was consistently more dominating. The differences were large and statistically significant. Brewer found also a long and highly consistent array of differences in the classroom behavior of the two rooms of children. These differences were in the directions that might be expected from the obtained behavior differences in the teachers.

The children with the more integrative and less dominating teacher showed significantly lower frequencies in:

1. Looking up at seat work.
2. "Undetermined" child-child contacts (which included "whispering"
3. Playing with "foreign objects."
4. Conforming to teacher domination.
5. Nonconforming to teacher domination.

As compared with the children in the other room, the children with the more integrative and less dominating teacher showed significantly higher frequencies in a number of categories of child behavior representing spontaneity, initiative, and social contributions to others.

A question which Brewer could not answer satisfactorily concerned the problem of causation, or dynamic relationship, between the behavior of the teachers and the behavior of the children. Did Brewer's consistent differences mean that the children in the two rooms were different mainly because the teachers were different, or that the teachers in the two rooms were different mainly because the children were different?

Did teacher 2D have a more difficult group of children to begin with? Were the children in room 2D maladjusted in some way that would call forth more domination in any teacher? Or did they bring from home

maladjustments that made it difficult for teacher 2D to use integrative behavior in the schoolroom? Brewer did not think so, but from his data he could not definitely say so.

The children had been assigned to rooms by lot in the first grade and were promoted as room-groups through the elementary school. They came from the same socioeconomic levels and were approximately equal in intelligence, both as to means and ranges of IQ's in the two rooms. There were no known selective factors which accounted for the differences in children.

If some answer could be obtained for the above questions it would constitute an additional validation of the categories of teacher behavior. It would also bring nearer to a stage of practical application this research method for evaluating teachers' classroom personalities.

Brewer gathered his samplings of data in January and February, after the children had been with their teachers for about five months. For the present study it was decided to gather additional samplings of the behavior of the same teachers and of the same children a year later. The second-grade teachers would then be with new groups of children. The children studied by Brewer would then be with new teachers in the third grade. If the children in room 2D were badly adjusted for reasons beyond the teacher's control, the maladjustments should show up again with these same children in the third grade. The method would also permit the gathering of behavior data of the third-grade teachers and of the new rooms of second-grade children.

The general purpose of this research was to make a consecutive study of Brewer's second-grade teachers and a consecutive study of his second-grade children. In point of time certain horizontal and certain vertical comparisons could be made.

Horizontal comparisons in the following tabulation were made from data gathered in the same year:

Teacher contacts: teachers 2C with 2D in 1938
teachers 2C with 2D in 1939
teachers 3C with 3D in 1939
Child behavior: comparisons of rooms of children in the above three combinations.

Vertical comparisons in the following tabulation were made from data for consecutive years:

Teacher contacts: teacher 2C in 1938 with 2C in 1939
teacher 2D in 1938 with 2D in 1939
teachers 2C in 1938 with 3C in 1939
teachers 2D in 1938 with 3D in 1939
Child behavior: comparisons of rooms of children in the above four

The reason for making all these comparisons lay mainly in the great numbers of uncontrolled variables in evaluating the classroom behavior of teachers and of children.

In addition to the comparisons, intercorrelations between situational types of teacher contacts and categories of child behavior were computed for rooms 2C and 2D. For this analysis a total of 800 coefficients are offered.

The subjects were 129 different children and four different teachers.

The methods were the same as used by Brewer (9, chapter ii). Reliability of observers was established through simultaneous independent observations of two observers.

Evidence confirmed the measured individual differences in teachers and showed that certain behavior patterns and personality characteristics in the teachers persisted into a second year, even though the teachers were then with different groups of children.

The teacher, 2D, whom Brewer found to be more dominating, was a year later without exception more dominating in her use of the several types of group contacts and again significantly below teacher 2C in her use of group integrative contacts. By comparison with the other second-grade teacher, teacher 2D in both years used higher frequencies of DC, domination in conflict contacts and lower frequencies of IT, integration in working together. This was true whether her contacts were with individual children or with groups of children. The differences the second year were still large, with critical ratios ranging from 2.2 to 8.8.

Although in 1939 the behavior of the children in the two rooms showed fewer extreme contrasts than in 1938, the general trend of child behavior was consistent with the differences in the classroom behavior of the teach

In 1939 there were no significant reversals in relative mean frequencies of behavior of the children with the two second-grade teachers. Without exception, the new children with the more dominating teacher in 1939 showed lower frequencies in ten categories of behavior representing socia contributions to others.

This was the same pattern of behavior shown the year before by the other group of second-grade children in this same teacher's room.

It is very improbable that in 1939, as in 1938, there were antecedent difficulties in the personalities of the children who had been assigned by lot to room 2D. It is highly improbable that outside factors made the behavior of two consecutive groups of children in teacher 2D's room so consistently different from the behavior of two consecutive groups of children also assigned by lot to room 2C. Even if this were so, the evidence shows only that after being with these children for five months teacher 2D, in both years, was using high frequencies of a technique which could be expected either to stifle spontaneity and initiative or to intensify, not reduce, conflict and misunderstanding in her room. If teacher 2D had special cases of "maladjustment" in her room, the evidence shows that she was making only infrequent attempts to enlist the social participation of her children in some common purpose. If the higher frequencies of conflict situations were "provoked" by the children, then teacher 2D was not cutting the vicious circle of domination-resistance by the use of integrative approaches to the child.

In both years teacher 2D used about four and one-half times as many dominative contacts as integrative contacts with individual children; the ratio of her total integrative contacts to total dominative contacts was .22 for both years.

When the children in room 2C were promoted to the third grade they found a general tendency for the third-grade teacher to use significantly more group domination and significantly less group integration than they had received in the second grade. In their mean frequencies of individual contacts teachers 2C and 3C were quite similar; not one critical ratio was over 1.5. However, the correlations for teacher contacts of these two teachers with the same individual children represented only low and unreliable relationships. This means that, in spite of the similarity of teachers 2C and 3C in their general use of individual contacts, there was no tendency for the teachers to respond systematically to the same individuals.

When the children in 2C were promoted to the third grade there was little tendency for behavior patterns in individual children to persist through the two years. Of thirty correlations for child-behavior categories only three were statistically reliable: for holds up hand in recitation, total responses in recitation, and total of social contributions to others.

From a mental hygiene point of view the change of children's teachers from room 2C to 3C represents an adverse change, both as to teacher contacts and as to child behavior.

From a mental hygiene point of view the promotion of the children from 2D to 3D represents changes that are inconsistent, though mainly a change for the better in the third grade. In general, the third-grade teacher was more frequently dominating in her contacts with groups of children. The children encountered three times as many group DC, domination in conflict, contacts as they found in the second grade. But they also had more frequent group integrative contacts in the third grade. The mean frequencies of all types of dominative contacts with individual children were lower in the third grade. In the third grade the children encountered twice as many individual IN, integration with no evidence of working together, contacts, but only about three-fourths as many of the IT, integration in working together. The difference for IN contacts was statistically reliable.

At the beginning of the study the question was asked: when these children are placed with a different teacher will the children, as individuals or as groups, be similarly treated? Of twenty correlations, representing both group and individual contacts of the two teachers with these same children, all were low and statistically unreliable except three for individual contacts: DN-(9-10), domination, with no evidence of conflict - lecture method; total domination; and total contacts. The correlations for DC, domination in conflict, and IN, integration in working together, were low and unreliable for both group and individual contacts. This

means that there was no systematic tendency for the second- and third-grade teachers either to work with certain individuals in the group or to work against them in conflict with them. The data contradict an inference that there was something inherent or persistent in the personalities or behavior of the children that elicited a systematic use of these two types of contact from both second- and third-grade teachers.

At the beginning of the study the question was asked: if the children were to be placed with different teachers would their behavior continue to be largely the same? The answer is "No." Of thirty coefficients correlating the behavior of the children in the second grade with the behavior of the same children in the third grade, only three were statistically reliable: undetermined child-child contacts, fails to answer in recitation, and makes voluntary suggestions as a social contribution to others. The coefficient for conforming was even negative in sign, though low. In Room 2D, as in Room 2C, the behavior of the children was not a systematic cause of the behavior of the teacher.

Personality differences between teachers 2C and 2D were further confirmed by the intercorrelations of types of teacher's individual contacts and child-behavior categories. For example, teacher 2C tended to cut the vicious circle with those children most in conflict with her; teacher 2D did not. As between DC and IN contacts the correlation for teacher 2C was .55; that for teacher 2D was .24.

The coefficients showed further that teacher 2C did not meet the child's aggression with aggression of her own. For teacher 2C, DC contacts had only unreliable relations with the child-behavior categories dominates other children and nonconforming. That teacher 2D did meet aggression with aggression is shown by reliable correlations between her DC contacts and dominates other children and nonconforming, the coefficients being .48 and .51, respectively. These coefficients can also be interpreted to mean that in Room 2C the children themselves did not meet aggression with aggression, that is, they did not systematically respond to the teacher's individual DC contacts by dominating other children or by nonconforming. In Room 2D, those children who were most frequently dominated by the teacher in conflict situations tended to show higher frequencies of nonconforming behavior in response to the teacher and of domination of other children.

This study showed further that the measured spontaneity and initiative of children was in part a reflection of measured behavior in the teachers.

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VITA

Mary Frances Reed was born the twenty-seventh day of October 1906 in Holton, Kansas, where she obtained her elementary and high-school education. She attended Kansas State College from 1924 to 1928, receiving a B.S. degree in journalism in May 1928 and a B.S. degree in home economics in July 1928. She attended the Merrill-Palmer School from September 1928 to June 1929. The following year, from September 1929 to June 1930, she worked as assistant superintendent at St. Agnes Home for Girls, Romeo, Michigan. During the summer of 1930 she was graduate assistant in the nursery school at Kansas State College. For the school year 1930–31, she was granted the Omicron Nu research fellowship and attended Ohio University, Athens, Ohio, receiving her M.A. degree in June 1931. During the summer following, she had charge of and taught in the nursery school at Ohio University.

From 1931 to 1937 she was assistant professor in home economics at Oklahoma Agricultural and Mechanical College.

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